DRAFT
Phase IV As-Built Construction and Final Inspection Report

Sediment Portion of the Former Everett Staging Yard Disposal Site

One Broadway, Everett, Massachusetts

Release Tracking Number (RTN) 3-13341

Prepared by:

AMEC Massachusetts, Inc.
Chelmsford, MA 01824

December 2018

Project No. 3651170065

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1.0 INTRODUCTION

1.1 Purpose and Scope

This Phase IV As-Built Construction and Final Inspection Report (Phase IV As-Built Report) has been prepared by AMEC Massachusetts Inc. (AMEC) for the sediment portion of the Former Everett Staging Yard Disposal Site (the Disposal Site) located in Everett and Boston (**Figure 1-1**). The Disposal Site, which includes both uplands and a portion of an embayment of the Mystic River (**Figure 1-2**), is identified by Release Tracking Number (RTN) 3-13341. This Phase IV As-Built Report was completed for Wynn MA, LLC and Everett Property, LLC (collectively, Wynn) the current owners of the property on which the Disposal Site is located.

The Massachusetts Contingency Plan (MCP, 310 CMR 40.0000) requires that an As-Built Construction Report be prepared for any disposal site where an Engineered Barrier, cap or other on-site system for the containment and/or physical immobilization of oil and/or hazardous material is constructed as part of the remedial action alternative [310 CMR 40.0875(1)(b)]. The Comprehensive Remedial Action (CRA) implemented for the sediment portion of the Disposal Site includes construction of a clean cover (cap); therefore, this Phase IV As-Built Report has been prepared to meet the MCP requirements. The MCP also requires that a Final Inspection Report be prepared upon completion of construction activities and implementation of the CRA [310 CMR 20.0878]. A final inspection was conducted after remedial construction activities were completed and is described in this report.

1.2 Report Organization

In accordance with 310 CMR 40.0875(2), this report documents the construction activities conducted, techniques and materials used, tests and measurements performed and any significant modifications to the design or construction of the CRA as described in the combined Phase III Remedial Action Plan (RAP) and Phase IV Remedy Implementation Plan (RIP) submitted by AMEC (June 2017). The remainder of this Phase IV As-Built Report consists of the following sections:

- Section 2: Background – A description of the project background, roles of the parties involved in implementing the CRA, a summary of CRA activities, and a list of permits and approvals obtained.
- Section 3: Phase IV Implementation and As-Built Conditions – A discussion of construction materials and installation activities for the various facets of the CRA including a discussion of modifications from the Phase IV RIP.
- Section 4: Final Inspection – A description of the final inspection conducted by the Licensed Site Professional (LSP).

Supporting information are provided in figures, tables, and appendices referenced throughout the report.

2.0 BACKGROUND

2.1 Site Location and Locus Map

For the purposes of this report, the “Wynn Property” refers to the combined areas of land and water which are currently owned by Wynn and are located at One Broadway in Everett and an unnumbered parcel on Alford Street in Boston (**Figure 1-1**). The Wynn Property encompasses approximately 35 acres, which includes an upland portion (approximately 22 acres) and a portion of the adjacent Mystic River to the southwest (approximately 13 acres). The approximate latitude and longitude for the Site are 42.39 degrees north and 71.07 degrees west, respectively. The Universal Transverse Mercator (UTM) coordinates are approximately 4,695,650 meters north and 329,600 meters east.

The upland portion of the Wynn Property is an irregularly shaped, approximately 22-acre parcel of land roughly bounded by Alford Street/Broadway (Route 99) to the east, Massachusetts Bay Transit Authority (MBTA) railroad tracks to the west, an MBTA bus repair and maintenance facility to the north, and the Mystic River to the south. The sediment portion of the Wynn Property consists of an approximately 13-acre embayment of the Mystic River which is bounded to the northwest and north by the upland portion of the Wynn Property and to the northeast and east by the Boston Water and Sewer Commission’s Material Handling Facility (180-220 Alford Street).

For the purposes of this report, the “Disposal Site", or more formally the Former Everett Staging Yard Disposal Site, includes the uplands where chemical manufacturing occurred and the portion of Mystic River sediment which has been impacted by chemicals from the uplands. The boundary for the sediment portion of the Disposal Site depicted on **Figure 1-2** was drawn to separate areas where concentrations of Disposal Site-related chemicals are above “local conditions” from areas where concentrations are generally at or below local conditions. The disposal site boundary was also drawn considering the Conceptual Site Model (CSM) and principles of sediment transport dynamics. Delineating the extent of Disposal Site-related chemicals in sediment based on local conditions indicates the maximum potential extent of the aquatic disposal site boundary. Given the many historical and ongoing sources of contamination to the Mystic River (as well as natural sources of the same chemicals) this may still be an over-estimate of the impacts directly associated with chemical manufacturing on the upland portion of the Wynn Property.

The Disposal Site boundary encompasses approximately 7.8 acres of sediment. The main portion in the embayment encompasses approximately 7.3 acres and a smaller intertidal area to the west is approximately 0.5 acres. The total area within the Disposal Site boundary which poses a risk to benthic communities (the Remediation Area) is approximately 7.4 acres. This includes 7.3 acres in the main embayment and 0.1 acres in the smaller area to the west (**Figure 1-2**).

2.2 Regulatory History and Status

O'Donnell Sand & Gravel, Inc. (O’Donnell) submitted the initial notification of a release on the Wynn Property in January 1996 based on the presence of elevated concentrations of certain metals and petroleum hydrocarbons in soil as well as areas of low pH in groundwater. Consulting Engineers & Scientists (CES) filed a Phase I Initial Site Investigation and Tier Classification (classifying the Former Everett Staging Yard Site as Tier II) on behalf of O’Donnell in January

1997 (CES, 1997). Following the purchase of the property by Mystic Landing, LLC in 2001, additional subsurface and sediment investigations were completed under Tetra Tech Rizzo and others which were documented in a Phase II Report submitted in December 2007.

FBT Everett Realty, LLC purchased the property in October 2009 and in February 2012 GEI submitted a Phase II Comprehensive Site Assessment (CSA) which summarized the work previously described in the Tetra Tech Rizzo Phase II Report (no new sampling was performed). Wynn purchased the property in January 2015 and in December 2015, GZA GeoEnvironmental, Inc. (GZA) submitted a Supplemental Phase II Report which contained the results from an extensive sampling program as well as an updated Disposal Site boundary and risk characterization (GZA, 2015).

In December 2016, AMEC prepared a Revised Supplemental Phase II CSA Report (AMEC, 2016) which presented the CSM, assessed risks to human health and the environment, and defined the limits of those areas which could pose a risk. The CSM and an evaluation of local conditions identified arsenic, lead, mercury, and vanadium as specific contaminants of concern tied to historical manufacturing operations and processes on the property. The presence of phthalates and polychlorinated biphenyls (PCBs) detected in sediment were determined to be related to historical operations on the adjacent Monsanto West property.

In June 2017, a combined Phase III RAP and Phase IV RIP for the sediment portion of the Former Everett Staging Yard Site was submitted to MassDEP (AMEC, 2017). The goal of the remedial action was to eliminate significant risk to benthic organisms associated with exposure to contaminated sediment at concentrations which exceed benchmarks or local conditions. Sediment remediation was accomplished through the dredging and capping or capping alone of contaminated sediments. Dredged materials were transported off-site for disposal. These remedial actions addressed sediment contamination associated with former operations on the Wynn Property (i.e., arsenic, lead, mercury and vanadium). Contamination from other sources (metals likely from a drain pipe, phthalates and PCBs from Monsanto West, and polycyclic aromatic hydrocarbons (PAHs) and petroleum from stormwater runoff, industrial releases, and shipping-related impacts) was remediated incidentally during the remediation of the four metals associated with former operations on the Wynn Property. Dredging and installation of the cap were largely completed between October 2017 and March 2018.

On July 18, 2018, following discussion with MassDEP (Mr. Andrew Clark), Matt Grove of AMEC notified MassDEP of a Condition of Substantial Release Migration (SRM) which had resulted in the presence of phthalates (primarily bis(2-ethylhexyl)phthalate or BEHP) and PCBs in sediment on the Wynn Property at concentrations above local conditions. MassDEP issued RTN 3-35073 for this release so that it could be tracked separately from remedial actions related to metals contamination associated with the Former Everett Staging Yard Disposal Site. In accordance with Massachusetts General Law (M.G.L.) Chapter 21E, Section 5D(a)(4), Wynn is not required to conduct an Immediate Response Action (IRA) to address RTN 3-35073 because the concentrations of BEHP and PCBs have migrated in surface water from a known upstream source and do not pose an Imminent Hazard at the downstream Wynn Property. Wynn never owned or operated the upstream property from which BEHP and PCBs are derived. On August 15, 2018 Wynn filed a Downgradient Property Status (DPS) Submittal under RTN 3-35073 for BEHP and

PCBs present in sediments on their property which remain following remediation of metals in sediments associated with RTN 3-13341.

2.3 Roles and Responsibilities of the Parties Involved in Implementing the CRA

Wynn, as an Eligible Person [310 CMR 40.0006 (12)], is the Potentially Responsible Party for the Disposal Site. The other primary parties involved in the implementation of the CRA were:

- Remedial Action Contractor – SPS New England, Inc. (SPS) of Salisbury, Massachusetts
- LSP, Engineer of Record, and Construction Quality Assurance Consultant – AMEC

SPS, as remedial action contractor, employed several subcontractors to assist with remediation. The major remediation subcontractors were:

- Charter Contracting Company, LLC (Charter) of Boston, Massachusetts – mechanical dredging, operation of residual water treatment system, dewatered sediment processing & handling, capping
- J.R. Vinagro Corporation of Johnston, Rhode Island – barge demolition
- Lockwood Remediation Technologies, LLC of Leominster, Massachusetts – water treatment system construction
- Steele Associates Marine Consultants, LLC (Steele) of Falmouth, Massachusetts – bathymetric surveying
- ESS Laboratory (ESS) of Cranston, Rhode Island – environmental laboratory

AMEC reviewed the remediation contractor's submittals and provided construction observation and quality assurance for the CRA. AMEC employed subcontractors to assist with construction quality assurance (CQA), and LSP activities. The major subcontractors were as follows:

- LBP Solutions, LLC of Foxborough, Massachusetts – asbestos project monitor
- ProScience Analytical Services of Woburn, Massachusetts – asbestos analytical laboratory
- CEI Labs, Inc. (now Eurofins CEI, Inc.) of Cary, North Carolina - asbestos analytical laboratory

2.4 Summary of CRA Activities

The selected remedy included the following major activities:

- Mobilization and site preparation,
- Environmental controls,
- Barge demolition,
- Debris removal,
- Dredging,
- Sediment processing, water treatment and off-site disposal,

- Capping, and
- Demobilization.

Appendices C and D of the June 2017 combined Phase III RAP and Phase IV RIP contained the 60% Issued for Permitting package of Construction Drawings and Specifications. Final documents were issued for construction on August 23, 2017. Revisions and modifications to the drawings and specifications prior to and during construction are discussed in the following section.

2.5 Permitting

Construction and implementation of the Remedial Action primarily consisted of demolition, dredging and capping. These activities required federal, state, and local permits and/or approvals as outlined below. Inspection, sampling and analysis requirements for permits were included in the actual permits.

Permits that were obtained by Wynn included:

Permit/Approval	Permittee/ Applicant	Issuing Agency	Date of Issue or Effective Date	Permit/file/Reference Number
Section 404 Permit	Wynn MA, LLC	U.S. Army Corp of Engineers	December 12, 2016	NAE-2013-1026
Section 404 Permit Modification	Wynn MA, LLC	U.S. Army Corp of Engineers	September 11, 2017	NAE-2013-1026
Chapter 91 Waterways License (Navigational Dredging)	Wynn MA, LLC	MassDEP	August 3, 2016	14188
Chapter 91 Waterways License (Remediation)	Wynn MA, LLC	MassDEP	September 25, 2017	14512
Combined 401 Water Quality Certification (Remediation)	Wynn MA, LLC	MassDEP	August 25, 2017	X270532
Combined 401 Water Quality Certification (Navigational Dredging)	Wynn MA, LLC	MassDEP	January 22, 2016	X266062
MEPA Certification – Notice of Change	Wynn MA, LLC	Executive Office of Environmental Affairs	April 7, 2017 Secretary's Certificate Issued	EOEEA #15060
Order of Conditions (Remediation)	Wynn MA, LLC	Everett Conservation Commission	November 25, 2015	022-0095
Order of Conditions (Navigational Dredging)	Wynn MA, LLC	Everett Conservation Commission	September 24, 2015	022-0098

Permit/Approval	Permittee/ Applicant	Issuing Agency	Date of Issue or Effective Date	Permit/file/Reference Number
Order of Conditions (Remediation)	Everett Property LLC	Boston Conservation Commission	June 14, 2017	006-1517

3.0 PHASE IV REMEDY IMPLEMENTATION AND AS-BUILT CONDITIONS

Phase IV Remedy Implementation activities were conducted from September 18, 2017 through August 9, 2018. The primary components of the sediment remediation included:

- Mobilization and site preparation,
- Environmental controls and monitoring,
- Barge demolition,
- Debris removal,
- Dredging,
- Sediment processing, water treatment and off-site disposal,
- Capping, and
- Demobilization

The following sections provide a detailed summary of the CRA as implemented at the Site. AMEC provided oversight of the remedial construction activities for Wynn. Selected photographs taken during implementation are included in **Appendix A.**

3.1 Mobilization and Site Preparation

An existing conditions bathymetric survey was conducted by Steele on September 18, 2017 to determine existing elevations and refine the dredging plan based on current data. The existing conditions (and other bathymetric surveys during dredging and capping) were performed using a 24-foot aluminum survey vessel outfitted with an R2Sonic 2024 broadband multibeam echosounder with a beam with of 1º x 2º at the frequency of 200 kHz. A CODA Octopus F175 inertial motion reference unit provided attitude and heading corrections. A Valeport SVS real-time probe and Digibar S profile probe provided sound velocity corrections. Horizontal positioning was achieved using a Trimble SPS855 RTK positioning system and data was logged using Hypac 2015 and Hysweep data acquisition software.

On September 27, 2017, Charter and SPS began the mobilization of equipment and materials to the SPS bulkhead located on the Island End River (95 Behen Street, Everett, MA), approximately 1.5 miles south of the Disposal Site (**Figure 1-1**). Due to the ongoing soil remediation and construction on the upland portion of the Wynn Property, there was no area large enough to serve as the staging and material processing area for the sediment remediation. The material processing area constructed at the SPS bulkhead consisted of a series of up to five separate lined and blocked cells (**Figure 3-1**; note that bin 5 was never constructed). The bin construction was as follows:

- A high-density polyethylene (HDPE) geomembrane liner was installed over the bulkhead pavement to prevent migration of water from the material mixing bins.
- Bin blocks and jersey barriers were placed on top of this liner in the layout of the bins.
- A temporary layer of pavement was constructed in the base of the sediment bins to protect the geomembrane liner from equipment damage during unloading, stabilization and handling activities.

- The paved layer in the bins was strategically sloped towards the corners of the bins where sumps were installed to remove excess water.
- The liner was wrapped up around the exterior of the bin blocks and jersey barriers in order to form a water tight basin.
- An access road consisting of crushed stone was constructed between the bins to allow for a machine to easily access all sides of the mixing bins. Beneath the top 3-6 inches of stone, an HDPE liner was placed to protect the remaining stone from contamination.

Along with this layout, a spill plate was laid across the entire width of the gap between the material barges and the edge of the mixing bins. The plate was large enough to prevent material from falling onto areas outside of the barge and into the Mystic River. The sediment processing area also included a Portland cement silo, lighting plants, a 21,000-gallon frac tank (sump water storage), decontamination pad/wheel wash, material storage area, and office trailers.

In addition to the sediment processing area construction preparation, SPS and Charter mobilized tugboats, sediment barges, work boats, work barges, excavators, material handlers, and loaders. Charter constructed two field offices and an equipment storage room on the work barge that held the dredge excavator. Lockwood Remediation Technologies, LLC designed and constructed a temporary water treatment system on the water treatment barge. The details of the water treatment system are discussed in Section 3.6.

3.2 Environmental Controls and Monitoring

On September 28 and 29, 2017 a turbidity curtain and absorbent boom were installed across the embayment from the end of the Wynn concrete pier to the bank of the adjacent Boston Water and Sewer Commission (BWSC) property (see photographs in **Appendix A**). The turbidity curtain was installed to limit the migration of demolition debris and suspended sediment to areas outside the active work area.

To ensure the turbidity curtain was working effectively, turbidity readings were taken (and recorded) daily at three testing locations: inside the turbidity curtain, just outside the turbidity curtain, and 50 feet away from the project work site (background). Three turbidity readings were taken at each of the three testing locations: at the water surface, at the midpoint depth, and at the mudline. Turbidity monitoring was conducted using a Horiba U-50 Multi-Parameter Water Quality Meter with built-in data logging which was calibrated each day prior to use. The daily turbidity readings are summarized in **Table 3-1**.

In addition to the daily measurements, turbidity was measured inside the curtain prior to opening the curtain to determine if it was safe to open the curtain. The protocol for determining if the turbidity curtain could be opened (presented in **Table 3-2**) was based on ongoing operations, tidal cycle, and comparison to the background readings. During the remediation, the turbidity readings inside the curtain prior to a planned opening never exceeded 50 nephelometric turbidity units (NTU).

3.3 Barge Demolition

Demolition of five abandoned barges (shown on **Figure 1-2**) was required for remedy construction but was not in and of itself a remedial action. One sunken barge (#1 on **Figure 1-2**) and four additional barges located in the intertidal zone (#2 through #5 on **Figure 1-2**) were removed prior to dredging. The barges were not structurally stable such that they could be removed with salvage equipment and removed intact. As a result, they were dismantled/demolished in place.

On September 18, 2017, the barges were surveyed for presence of suspect asbestos, lead paint and other hazardous materials prior to the start of demolition. The primary focus of the assessment was Barge #2 as several structures were present on the barge (see photos in **Appendix A**). A total of 11 samples of suspected asbestos containing material (ACM) were collected by AMEC's certified asbestos inspector and sent to CEI Labs, Inc. for analysis. ACM was confirmed in two of the 11 samples which included roof material and window glaze of the structure sitting atop of the barge (see **Appendix B** for the asbestos sampling summary and laboratory results). On September 28, 2017 an Asbestos Notification Form (BWP AQ 04) was submitted to the MassDEP prior to the start of abatement by Vinagro on September 28 and 29, 2017. The ACM was placed in a sealed dumpster which was temporarily stored on site until October 2, 2017 when it was transported under an Asbestos Waste Shipping Record (AWSR) to Minerva Enterprises Landfill in Waynesburg, Ohio for disposal (see **Appendix B** for a copy of the AWSR).

The barge demolition commenced on October 2, 2017 and was also performed by Vinagro. Demolition was conducted using both barge-mounted and land-based equipment (see **Appendix A** for select photographs of barge demolition). Barges #3 and #4 were demolished using a land-based excavator (Cat 345 long reach and Cat 335F) that temporarily stockpiled the debris on polyethylene sheeting on the upland area adjacent to the shoreline. Barges #1, #2, and #5 were demolished using a barge mounted excavator (Volvo 480E). The wooden debris from these barges was placed in a work barge and unloaded onto the upland temporary stockpile area. Tugboats were used to move the demolition barge with the excavator and the debris barges around the embayment. Typically, the demolition of the barges using land based equipment was conducted at low tide and the demolition of the barges using water based equipment was conducted at high tide.

During the unloading of the debris from Barge #1, a 12-inch diameter pipe with a black coating was observed (see field report and photos in **Appendix B**). The pipe was separated from the wooden debris and sampled, along with the coating on some of the wooden debris, to determine if the materials were ACM. The laboratory results from ProScience Analytical Services (Woburn, Massachusetts) were negative for asbestos for both the pipe and wood coatings. A copy of the analytical laboratory report is included in **Appendix B**.

The stockpiled demolition materials were loaded from the temporary stockpile onto trucks for disposal. In all, 557.85 tons of barge demolition debris (creosote treated timbers) was transported to Aggregate Recycling Corporation of Eliot, Maine for disposal (see **Appendix C** for copies of the shipping documents). The barge demolition was substantially complete on October 14, 2017; however, Vinagro continued to clean up small pieces of demolition debris in the tidal flat using a work boat for several days following substantial completion.

3.4 Debris Removal

Prior to the start of the dredging operations, a debris survey was conducted to determine the extent of debris in the dredge area (see **Appendix D** for a copy of the survey). The survey was conducted using a 200 kHz Multi-Beam Sonar and to confirm the imagery the survey was also conducted using a 900 kHz Side Scan Sonar. A total of 58 targets were identified in the debris survey most assumed to be pilings associated with the razed dolphins from the former Monsanto shipping terminal.

Pilings were removed using a crane with a toothed open clamshell bucket. The crane was mounted on a barge that was moved into place with a tugboat. The dredge excavator with the environmental clamshell bucket was also used to remove some of the pilings but due to the difficulty with the bucket gripping the pilings, most of the pilings were removed with the crane. After the pilings were pulled from the sediment, they were placed in barges and transported to the sediment processing area for later disposal. In total, 232 wooden pilings and 7 steel pilings were removed as shown on **Figure 3-2**. A total of 110.25 tons of debris from the pilings were disposed of at Aggregate Recycling Corporation of Eliot, Maine (see **Appendix C** for a copy of the material shipping records).

3.5 Dredging

Mechanical dredging was used for the portion of the Remediation Area to be dredged. The dredged area was separated into two distinct areas:

- Elevation based (navigation dredge) – dredge to elevation -16.5 NAVD88
- Depth based (remediation dredge) – dredge to 1.5 feet below existing mudline

These two dredge areas equaled approximately 4.3 acres (2.2 acres in the main part of the embayment and 2.1 acres in the intertidal area). The limits of the sediment removal areas are shown on the Record Drawings (**Appendix E**).

In the elevation based dredge area, sediment was removed to elevation -16.5 NAVD88 to allow for sufficient depth for navigational purposes after capping. This included targeted dredging of certain areas of the deeper channel to achieve a final capped elevation of -15 NAVD88. In the depth based dredge area, remedial dredging was performed to a depth of 18 inches below existing mudline.

3.5.1 General Sediment Dredging

The dredge area was subdivided for construction purposes by SPS/Charter into 30 cells as shown in **Figure 3-3**. Cells 1 through Cell 12 along with Cell 27 and Cell 30, were dredged to a depth of -16.5 feet NAVD88 (elevation based, navigational dredging). Cell 14 through Cell 25 along with Cells 28 and Cell 29, were dredged to a depth of 18-inches below the original sediment depth (depth based remedial dredging). Cell 13 and Cell 26 were dredged to varying depths (18 inches or greater) to act as the transition between the remediation dredging and the navigation dredging. Bathymetric surveys were routinely conducted to confirm that the dredging had been conducted to the required elevations.

Sediment removal was conducted by mechanical dredging using an Anvil Attachments, 4 cubic yard, level-cut, hydraulic-actuated, environmental clamshell bucket on a Komatsu PC1250 excavator (See **Appendix A** for photographs). The excavator was mounted on a 110' by 40' barge with hydraulic-actuated spuds. The dredge barge and bucket were equipped with positional sensors that integrated with the Dredge Bucket Positioning System software which tied into the electronic Real-time Kinematic Differential Global Positioning System. The dredge excavator used the network of inclinometers, pressure sensors, and trigonometric functions to calculate bucket depth with respect to tide level. These systems were connected to a heads-up display in the excavator cab that provided the operator with the real-time position of the bucket in relation to the bathymetry, target depth in plan and section view. A tugboat and support boats were used to move the dredge barge into place.

The sediment dredging commenced on October 16, 2017 and was completed on January 20, 2018. The duration of dredging was longer than anticipated due to weather, and delays in transporting the processed sediment to the off-site disposal facilities which resulted in insufficient room at the sediment processing area. The Phase IV Remedy Implementation Plan (AMEC, 2017) estimated that 24,110 cubic yards of sediment would be dredged; however, according to the dredge bucket files, 20,449 cubic yards of sediment were actually dredged. The difference between the two quantities is primarily due to changes in elevation observed in the pre-dredge survey (the survey data used for the design volume was several years old) which also resulted in changes to the dredge footprint (i.e., elimination of a dredge area in the main navigation channel due to changes in elevation). These changes reduced the overall volume of material which needed to be dredged in order to achieve the remedial and design objectives.

3.5.2 Asbestos-Impacted Sediment Dredging

During the sediment pre-characterization sampling program (described in Section 3.6.3 below), Wynn elected to analyze sediment for asbestos based on presence of asbestos in soil on the upland portion of the Disposal Site. Samples were collected from the 84 locations shown on Figure 1 in Appendix B of the Non-Traditional Asbestos Abatement Work Plan (the "NT Plan") in **Appendix F.** Asbestos was detected at a concentration of <1% in one of the samples tested by CEI Labs, Inc. (see Appendix C of the Non-Traditional Asbestos Abatement Work Plan in **Appendix F** for the full lab report). Per MassDEP's Bureau of Waste Prevention, any detection was sufficient to require the impacted sediment to be managed as asbestos containing waste.

On October 19, 2017, eight additional sediment cores (4 inner ring and 4 outer ring cores) were collected around the location of SED-C46 to delineate the extent of the asbestos-impacted sediment. No asbestos was detected in the four inner ring sediment samples analyzed by CEI Labs, Inc. (see **Appendix F** for the laboratory report). Therefore, the extent of the asbestos-impacted sediment was defined by the locations of the four inner ring samples (see Appendix B of the NT Plan for the location of the inner ring samples). On November 6, 2017, the NT Plan outlining the abatement procedures, which was prepared by Environmental Health & Engineering, Inc. (EH&E) of Needham, was submitted to MassDEP. The NT Plan was subsequently approved by MassDEP on November 14, 2017.

On December 20, 2017, a small barge equipped with two dewatering boxes was mobilized to the embayment. The dewatering boxes were placed on top of polyethylene sheeting and a perimeter berm was constructed. The dewatering boxes were lined with 400-micron filter fabric. Sediment was dredged and placed directly into the dewatering boxes (See **Appendix A** for photographs). A pumping system was attached to the drains on the dewatering boxes and the drain water was passed through a 5-micron filter before being processed in the full water treatment system (described in Section 3.5.2) and eventually discharged within the turbidity curtain.

The barge with the two dewatering boxes was transported by tugboat to the SPS bulkhead for temporary storage. On January 2, 2018, the dewatering boxes were transported to the Crossroads Landfill in Norridgewock, Maine and 6.55 tons of dewatered sediment were disposed as asbestos waste. The dewatering boxes were returned to SPS bulkhead where on January 23, 2018 the boxes were decontaminated. On January 29, 2018, 1.35 tons of decontamination waste was transported to Crossroads Landfill in Norridgewock, Maine for disposal as asbestos waste. Copies of the Asbestos Waste Shipping Records are included in **Appendix F**.

3.6 Sediment Processing, Water Treatment and Off-Site Disposal

3.6.1 Sediment Processing

As the sediment was dredged it was placed into hopper barges for dewatering. Once a barge was filled with dredged sediment, a tugboat would move the sediment barge from the dredge barge to the temporary water treatment barge (see photos in **Appendix A**). Once next to the water treatment barge, water that drained from the sediment could be decanted prior to transferring the sediment barge to the sediment processing area at the SPS bulkhead. Beginning on October 23, 2017, if the sediment was overly saturated with water, a coagulant (LRT-E-50) was added to the water in the barge to aid in the precipitation of the sediment from the water. Typically, the sediment from the navigation dredging area was loose and required the addition of the coagulant. Sediment dredged from the tidal flats (depth based dredging area) was more cohesive and did not require the addition of the coagulant.

After the decanted water was pumped from the sediment barges to the extent practical, the sediment barges were moved by a tugboat from the work area to the SPS bulkhead for unloading and processing. The sediment barges would be positioned so that the sediment could be unloaded into Bin 1 or Bin 2 depicted on **Figure 3-1**. The sediment was removed from the barge using a materials handler or excavator with an open clamshell bucket. After the barge was empty, a loader was used to transfer Portland cement from the silo to the top of the sediment in the bin. The sediment and Portland cement was churned using an excavator with a mixing head. The material was transferred by excavator from Bin 1 or Bin 2 to one of the surrounding bins (2 through 4) to allow it to solidify to a material that passed the paint filter test for transportation and disposal. Once the material passed the paint filter test (i.e., no free water), the sediment was stacked into a stockpile (generally in Bins 3 or 4) or directly loaded into truck for off-site transportation.

Due to the high water content in some of the sediment, an attempt was made to speed up drying by adding Sludgeguard, a bulk solidifier amendment, in addition to the Portland cement. However, the use of Sludgeguard was abandoned after several days due to its ineffectiveness.

Any water that separated from the sediment or rain water that collected in the bins was pumped from the sumps to a 21,000-gallon frac tank. The water from the frac tank was transferred to empty sediment barges and treated back in the embayment using the water treatment system described in Section 3.6.2.

3.6.2 Water Treatment

The water treatment barge was anchored via spuds inside the turbidity curtain (see photos in **Appendix A**). Water was initially pumped into two 18,000-gallon weir tanks and then flowed by gravity into two 10,000-gallon clarifiers. Two chemicals (LRT-E-50 Coagulant and LRT-800 Series Flocculant) were added to the water as it entered the weir tanks to aid in the settling process. From the clarifiers the water was pumped through a multi bag filter vessel (containing six No. 2 bag filters). From the bag filter the water was pumped through a 10,000-pound zeolite vessel and then through four carbon vessels containing granular activated carbon. After the water passed through the carbon vessels and the flow meter/totalizer, it was discharged to the embayment inside the turbidity curtain. The water treatment system schematic is shown in **Figure 3-4** and the water treatment system layout is shown in **Figure 3-5**.

Samples were collected from the effluent for Disposal Site-related metals (arsenic, lead, mercury and vanadium), PCBs, BEHP, extractable phase hydrocarbons (EPH) fractions, total suspended solids (TSS), and pH. Effluent samples were collected weekly for the first five weeks of system operation and then on a monthly basis for three months until discharge was terminated. The results of the effluent sampling are summarized in **Table 3-3**. Laboratory reports for influent and effluent samples are included in **Appendix G**.

In total, 706,616 gallons of water were processed through the temporary water treatment system between October 18, 2017 and January 20, 2018.

3.6.3 Off-Site Disposal

Prior to the start of navigational and remedial dredging, the sediment to be dredged was pre-characterized in situ. The dredging area was divided into 84 sampling cells each representing approximately 500 tons (315 cubic yards) of in place sediment (see **Figure 3-6** for sampling locations). A five-point composite sample was collected from each core to represent the cell. Five individual grab samples from each sediment cell core were screened with a photoionization detector (PID). The depth interval with the highest PID readings was selected for volatile organic compound (VOC) analysis. If all PID readings in a core were the same or zero, the grab sample was randomly selected. The remaining sediment was used to prepare the composite sediment sample with at least five points across the dredging depth intervals. Pre-characterization sediment samples were analyzed without the addition of Portland cement.

The grab and composite samples were transported to ESS Laboratory for analysis of the following parameters: corrosivity (pH), flashpoint, reactivity (cyanide and sulfide), RCRA 8 metals, VOCs, semi-volatile organic compounds (SVOCs), PCBs, pesticides, herbicides, and moisture content. Toxicity Characteristic Leaching Procedure (TCLP) testing was run for each of the RCRA 8 metals on each sediment sample. TCLP testing would also have been performed if concentrations of other constituents detected in sediment were above theoretical levels at which the TCLP criteria

may be exceeded; however, none of the concentrations were exceeded. The laboratory reports from the pre-characterization samples are located in **Appendix H**

Shipping of the processed sediment commenced on October 20, 2017. Initially, sediment was shipped to Waste Management's Turnkey Landfill in Rochester, New Hampshire. Multiple truckloads of sediment were rejected at the Waste Management landfill because the facility determined that the sediment was too wet for them to effectively work once it arrived at the landfill. The solution was to allow the processed sediment to sit in the sediment bins for a longer period to allow more water to drain from the sediment. Once Waste Management allowed the shipments to the Turnkey Landfill to resume, they limited the number of shipments per day; therefore, material was also shipped to Waste Management's Crossroads Landfill in Norridgewock, Maine. Due to the need to further increase the amount of processed material which could be shipped off-site, the Sunny Farms Landfill in in Fostoria, Ohio was added as a disposal facility. Processed sediment was trucked to the MHF Services Transload Facility in Worcester and placed in railcars for shipment to Sunny Farms.

In total, approximately 40,162.63 tons of processed sediment was shipped for landfill disposal on MassDEP Bills-of-Lading (BOLs):

- 3,281 tons were shipped to Turnkey Landfill
- 25,056.12 tons to Crossroads Landfill, and
- 11,824.88 tons to Sunny Farms Landfill.

Copies of the previously submitted BOLs are included in **Appendix C**.

During the sediment dredging, uncontaminated debris was recovered including: wood (not associated with the barge demolition), concrete, granite blocks, a Jersey barrier, crane mats, old turbidity curtains, steel cable, etc. In total, 47.06 tons of miscellaneous uncontaminated debris was disposed of at Aggregate Recycling Corporation of Eliot, Maine (see **Appendix C** for a copy of the shipping manifest).

3.7 Capping

The primary function of the cap material is to provide a clean substrate suitable as habitat for benthic organisms. Once dredging was completed, imported clean cap material was placed to restore the dredged areas to pre-construction elevations (tidal flats) or to the permitted elevation of -15 feet NAVD88 (navigation dredge areas). In either case, the final cap thickness was to be approximately 18 inches to achieve the remedial goals of the project (note that the construction specifications allowed for 2 inches of overplacement and 1 inch of underplacement on cap materials). In addition, there were areas of the embayment outside the dredged areas where approximately 18 inches of clean cap material was placed directly on the underlying sediment. The total capping area was approximately 7.26 acres (5.17 in the main part of the embayment and 2.09 acres in the intertidal areas). A total of 21,795 CY of cap material was placed to achieve the final grades shown on the as-built cap plan in **Appendix E**.

For purposes of construction, SPS/Charter divided the cap area into 42 cells (see **Figure 3-7**). Capping commenced on January 11, 2018 in the C13 tidal flat cell and on January 12, 2018 in

the C6 through C8 Cells. Bathymetric surveys were routinely conducted to evaluate whether the necessary cap thickness had been achieved within a particular cell or group of cells. Capping with the exception of cell C13 was completed on March 20, 2018. The final cap for C13 was completed on August 9, 2018. Additional details about the C13 area are included in Section 3.7.5.

During all of the capping work, the turbidity curtain remained installed across the embayment to reduce any turbidity getting to the Mystic River. As dredging was still ongoing in the navigation channel at the time capping started, a second turbidity curtain was installed separating the tidal flat capping area from the navigation channel dredging area. This second turbidity curtain was removed once the dredging work was complete.

Additional details above the cap materials and installation of the different cap types are provided in the following subsections.

3.7.1 Cap Materials

The 42 cells on **Figure 3-7** included four distinct capping types:

- Sand Cap (Type A) - coarse sand designed to resist propeller induced erosion in the channel.
- Navigation Area Cap (Type B) - 2-layered cap composed of a layer of coarse sand (Type A material) capped with a medium gravel (Type B material) to resist propeller induced erosion near the docks.
- Tidal Flat Cap (Type C) - a silty sand to match existing material in the tidal flats.
- Modified Sand Cap (Type MA) – coarse sand blended with ¾-inch crushed stone to resist erosion and downslope movement on subtidal slopes.

In addition, outlet protection stone (8-inch median diameter) was placed adjacent to the BWSC stormwater outfall to protect the cap from erosion by stormwater.

The cap material was supplied by several gravel quarries. The approved source for each of the cap materials was:

- Type A Sand – Aggregate Industries, Wrentham Quarry
- Type B Gravel - Aggregate Industries, Swampscott Quarry
- Type C Silty Sand – Aggregate Industries, Littleton Quarry
- Type MA Blended Sand – Aggregate Industries, Littleton Quarry

Samples of the four cap materials listed above were submitted for grain size analysis at a frequency of one sample per 500 cubic yards to verify that the material met the specifications. Due to difficulties in obtaining sufficient quantity of materials which exactly met the grain size distributions in the specifications, the ranges were adjusted in consultation with AMEC's geotechnical, coastal, and channel design engineers. The original and final grain size ranges are summarized in **Table 3-2**. Grain size data for individual material samples are included in **Appendix H**. In addition, the cap material samples were also tested at a frequency of one per 500 cubic yards for VOCs, SVOCs, pesticides, PCBs, herbicides, dioxins, MCP 14 metals, and total organic carbon (TOC) to determine that they were contaminant free (see **Appendix H** for

the laboratory analytical results). All accepted cap materials were non-detect for organic constituents and herbicides (excluding TOC) and below the MCP S-1 and/or MassDEP published background values for metals.

Cap material was delivered to the SPS bulkhead and stored in previously constructed bins which had been decontaminated by power washing the pavement bottom and HDPE liner laid over the sidewalls after all the sediment was removed. The wash water was pumped to a barge which was then moved to the water treatment system for processing. When capping material was needed, hopper barges were loaded at the bulkhead and moved by tugboat to the embayment.

3.7.2 Sand Cap (Type A) Installation

In the subtidal areas outside the navigational dredge area (Cells A1 through A19 on **Figure 3-7**), approximately 18-inches of Type A (sand) was placed on either the dredged surface (Cells A1 through A4 and A19) or the pre-remediation sediment surface (cells A5-A18) so that the cap elevation was generally below –15 feet NAVD88. The sand layer was designed to resist propeller induced erosion which might occur in the channel. The cap material was installed using the dredge excavator with the environmental clamshell bucket (see **Appendix A** for photographs). Cells A1 through A19 required a total of 9,651 CY of Type A material.

3.7.3 Navigation Area Cap (Type B) Installation

In the navigation area (Cells B1 through B5 on **Figure 3-7**) the cap consisted of two layers: sand (Type A material) and gravel (Type B material). Initially an approximately 12-inch thick layer of sand was placed across the cells to strengthen the underlying sediment and support the gravel layer. Once the thickness of the sand layer was confirmed by bathymetric survey, an approximately 6-inch thick layer of gravel was placed on top of the sand. The actual in place thicknesses of the two layers varied slightly across the cells; however, the total cap thickness was approximately 18 inches as designed. The design maximum elevation of the top of the cap was approximately -15 feet NAVD88 in order to provide sufficient water depth for vessel passage and maneuvering even at low tide. The gravel layer was designed to resist propeller induced erosion during maneuvering into and away from the docks where propeller forces were expected to be strongest. Both the Type A sand material and Type B gravel were installed using the dredge excavator with the environmental clamshell bucket (see **Appendix A** for photographs). Cells B1 through B5 used 1,849 CY of Type A material and 1,557 CY of Type B material.

3.7.4 Tidal Flat Cap (Type C) Installation

As shown on **Figure 3-7**, there were three areas of intertidal capping: the eastern tidal flats (Cells C1 through C12), an intertidal area adjacent to the newly constructed bulkhead (Cell C13) and a small tidal flat area outside the embayment (Cell C14). Each of the intertidal areas were capped with Type C silty sand material.

For the large eastern tidal flat area (cells C1 through C12), the majority of the cap material was placed using the dredge excavator and a low ground pressure bulldozer. The dredge barge and sediment barge, loaded with Type C material, were moved into the area at high tide and cap material was unloaded to create a temporary stockpile in the water. At low tide, a low ground

pressure bulldozer that was staged in the upland construction site was used to spread the Type C material around to the required elevation (see **Appendix A** for photographs). In total, 6,378 CY of Type C material was used in the capping of Cells C1 through C12.

In the other two intertidal areas (Cell C13 and C14) the Type C material was directly placed using the dredge excavator with the environmental clamshell bucket. Depending on how much material was needed, full or partial buckets of cap material were collected from the sediment barge and deposited by slowly opening the excavator environmental bucket and allowing the material to be placed in a controlled manner. Cell C13 used 395 CY of Type C material and Cell C14 used 235 CY of Type C material. The intertidal cap was placed to the original grade elevations.

3.7.5 Cell C13 Cap Modification

A natural groundwater seep in Cell C13 began eroding a channel in the newly installed Type C cap material (see **Appendix A** for photographs). Over time the combination of the seep and tidal action eroded a significant portion of the cap. Multiple attempts were made to place additional Type C material during the capping process. However, this approach was abandoned as it became clear that the cap material would not remain stable over the long term. Wynn requested approval to place different cap materials in C13 to correct the erosion of the previously placed cap and manage flow from the seep from each of the agencies having jurisdiction over C13 as described below.

- April 5, 2018, Wynn requested that Everett Conservation Commission Amend the Order of Conditions for DEP File No. 022-0109
- On April 11, 2018, Wynn requested a modification to the existing USACE permit (NAE-2013-1026)
- April 13, 2018, Wynn requested a modification to MassDEP 401 Water Quality Certification (Transmittal Number X270532)
- May 24, 2018 Wynn requested a Minor Project Modification to MassDEP Chapter 91 License 14512.

In order to achieve the previously permitted design elevations in the C13 area, coarser grained, rounded materials (Type D) were placed on the existing subgrade. In addition, a fabric-lined, stone channel was constructed at the location of the seep to manage the water flow. The modified cap was constructed by placing a layer of ¾-inch rounded stone below a layer of 1.5 to 3-inch diameter rounded stone. The seep channel was constructed of 8-ounce nonwoven filter fabric on top of the existing Type C material followed by a six-inch layer of ¾ inch rounded stone followed by a layer of four-inch rounded stone with a thickness as needed to meet the previously permitted elevations (see **Appendix A** for photographs).

The modified cap, including the channel, were installed by SPS between August 2, 2018 and August 9, 2018. All work was conducted in the dry when the C13 area was exposed at low tide. Elevation control was completed using survey grade stakes to ensure the final cap elevations were achieved. The excavator barge and material barge were strategically positioned based on

the work area and tide to allow for material placement with the long reach excavator (see photo in **Appendix A**).

3.7.6 Blended Sand Cap (Type MA) Installation

In the original design the transition areas between the navigational dredge area and intertidal areas were to be capped with Type A sand. However, material that met the original Type A specification was unable to be procured even by procuring a blended product. After consulting with AMEC's geotechnical engineers, the decision was made to blend coarser material ¾-inch stone with sand that most closely met the design specification for use in the transition areas between MLW and the navigational channel. The grain size distribution for this material is shown on **Table 3-4**. The blended sand/stone was placed as an approximately 18-inch thick layer in Cells MA1 through MA4 on **Figure 3-7**. A total of 1,651 CY of the blended sand cap was installed in these areas.

3.7.7 Outlet Protection Structure

Adjacent to the existing BWSC stormwater outfall pipe in the southern corner of the tidal flats (Cell C1 on **Figure 3-7**), stone outlet protection was installed to protect the cap from erosion. The stone outlet protection was designed to be 34 feet long and 15 feet wide at is widest point. After the area was dredged, Type C cap material was placed to bring the area close to the desired final grade. An 8 ounce non-woven filter fabric was placed on the newly installed cap material to prevent migration of fine particles through the voids in the stone and distribute the weight of the stone to prevent settlement into the underlying cap material (see photos in **Appendix A**).

The layout of the stone outlet protection was modified after the March 3, 2018 inspection indicated that the flow of water from the outfall had changed slightly from pre-dredging to post capping. The outfall protection was shortened and widened by removing stone from the northern end and placing it on the east side near the outfall pipe (see photos in **Appendix A**). Additional geotextile was shingled under the existing fabric prior to relocating the stone. This change in layout was made to resist erosion of the cap from the change in flow pattern observed in the field.

4.0 FINAL INSPECTION

AMEC provided a full-time field construction inspector to observe the progress of construction as the LSP's representative. AMEC's full-time field inspector was responsible for observing the construction and preparing daily reports and other Construction Quality Assurance forms to document the construction in sufficient detail and with sufficient continuity to provide documentation that the construction complies with the design drawings and specifications. Documentation included daily work summaries of construction activities, field measurements, and construction photographs.

The LSP was directly involved in the review of the interim survey data which was used to determine whether dredging or capping cells had achieved the required elevations. Final completion of the dredging and capping components was determined based on final acceptance of all dredging or capping cells. In addition, the LSP conducted site visits and inspections on several occasions during the course of the work as specific issues were identified.

As required by 310 CMR 40.0878(3) a list of any federal, state, or local permits, licenses and/or approvals related to the design, construction and/or operation of the selected remedial action alternative is included in Section 2.5 of this report.

The final inspection of the majority of the project was performed on March 3, 2018 in accordance with 310 CMR 40.0878. As mentioned above, interim survey data served as inspections of the components (i.e., dredging or capping) as each component was completed. Final inspection activities consisted of a site walk to check that completed construction activities had been performed in compliance with the Phase IV RIP, including the Construction Drawings and Specifications, and approved design modifications and submittals. Natalie Brown (Wynn), Bowen Chen (Wynn), Matt Grove (AMEC LSP), Danielle Ahern (AMEC Engineer of Record), and Katherine Mason (Charter Project Manager) attended the final inspection.

Danielle Ahern (AMEC Engineer of Record) and Bowen Chen (Wynn) inspected the C13 area on August 8, 2018 when construction was substantially complete. A final inspection was conducted by Matt Grove (AMEC LSP), Natalie Brown (Wynn) and Bowen Chen (Wynn) on November 13, 2018.

It is the opinion of the LSP that the Comprehensive Remedial Action has been constructed in accordance with the Phase IV RIP with modifications described herein that do not materially affect the intended function of the design. A Phase IV Completion Statement was prepared which includes an Opinion from the LSP that the Phase IV activities conform to applicable Phase IV requirements and performance standards. The certification required by 310 CMR 40.0009 is provided in Section G of the Phase IV Completion Statement which was submitted electronically through eDEP.

5.0 REFERENCES

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TABLES

Table 3-1
Daily Turbidity Readings
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
10/16/2017	1130	Inside Curtain	4.7	5.1	8
		Outside Curtain	4.1	2.7	3.3
		Background	0	0	0
10/17/2017	1750	Inside Curtain	42.2	54.6	56.1
		Outside Curtain	8.2	11.1	8.2
		Background	5.1	6.6	6.7
10/18/2017	1830	Inside Curtain	34.4	34	30.1
		Outside Curtain	11.9	10.1	10.7
		Background	4	2.2	0
10/19/2017	1750	Inside Curtain	20.1	19.8	12.3
		Outside Curtain	3.4	3.1	3.9
		Background	0	0.1	0.1
10/20/2017	1430	Inside Curtain	9.3	8.9	7.6
		Outside Curtain	4.2	3.9	3.7
		Background	0	0.1	0.2
10/23/2017	1907	Inside Curtain	1.9	2.3	3.3
		Outside Curtain	7.2	6.6	6.1
		Background	0	0	0
10/24/2017	1439	Inside Curtain	7.3	7.3	8.4
		Outside Curtain	2.2	2.7	1.4
		Background	0.4	1.2	0
10/25/2017	832	Inside Curtain	4.9	10.4	16.6
		Outside Curtain	2.1	5.6	6.8
		Background	0.9	3.5	6.4
10/26/2017	None	Inside Curtain	N/A	N/A	N/A
		Outside Curtain	N/A	N/A	N/A
		Background	N/A	N/A	N/A
10/27/2017	1741	Inside Curtain	4.7	5.5	5.6
		Outside Curtain	5.2	5.5	6
		Background	2.3	2.5	2.1
10/28/2017	0920 and 1225	Inside Curtain	8.1	14.1	13.9
		Outside Curtain	3.8	10.5	9.9
		Background	2.3	3.4	2.3
11/2/2017	1230	Inside Curtain	1.2	1.2	0.8
		Outside Curtain	0.3	0.8	0.4
		Background	0.1	0	0
11/3/2017	944	Inside Curtain	15.2	11	2.8
		Outside Curtain	3.4	2.6	1.5
		Background	1.7	0.3	0.1
11/4/2017	849	Inside Curtain	7	7.9	8.3
		Outside Curtain	6.2	7.6	8.3
		Background	1.1	0.5	1

Prepared by: John Rice
Checked by: Matt Grove

Table 3-1
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RTN 3-13341

Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
11/6/2017	721	Inside Curtain	7.2	9	9.9
		Outside Curtain	3.4	2.9	2.6
		Background	0	0	0
11/7/2017	630	Inside Curtain	16	17.5	18.7
		Outside Curtain	12.1	9.7	8.3
		Background	1.5	0	0.8
11/8/2017	557	Inside Curtain	5.7	5.2	4.2
		Outside Curtain	2.5	2.5	3.3
		Background	0.3	0	0
11/9/2017	556	Inside Curtain	5.4	3.6	3
		Outside Curtain	1.6	1.7	1.3
		Background	0	0	0
11/10/2017	1720	Inside Curtain	4.4	3.3	5.1
		Outside Curtain	3.1	3.3	4
		Background	0.1	0.2	0.2
11/13/2017	748	Inside Curtain	0	0	0
		Outside Curtain	0	0	0
		Background	9	8.5	8.1
11/14/2017	1131	Inside Curtain	0	0	0
		Outside Curtain	4.4	5.3	4.3
		Background	7.3	6	7.5
11/15/2017	558	Inside Curtain	1.2	1.1	1.1
		Outside Curtain	0	0.1	0
		Background	0.1	0	0
11/16/2017	None	Inside Curtain	N/A	N/A	N/A
		Outside Curtain	N/A	N/A	N/A
		Background	N/A	N/A	N/A
11/17/2017	2243	Inside Curtain	0	2.5	2.7
		Outside Curtain	0	0	0
		Background	0	0	0
11/18/2017	1134	Inside Curtain	9.8	8.6	5.6
		Outside Curtain	0	0	0.2
		Background	0	0	0
11/20/2017	847	Inside Curtain	5.7	6.2	3.4
		Outside Curtain	0	0	0
		Background	0	0	0
11/21/2017	1845	Inside Curtain	4	4	4.2
		Outside Curtain	0	0	0
		Background	0	0	0
11/22/2017	1034	Inside Curtain	2.9	4.1	1.9
		Outside Curtain	0	0	0
		Background	0	0	0

Prepared by: John Rice
Checked by: Matt Grove

Table 3-1
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Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
11/27/2017	1131	Inside Curtain	11.9	14	14.5
		Outside Curtain	0.9	6.4	6.5
		Background	0	0.1	0
11/28/2017	2038	Inside Curtain	1.5	1.6	4.4
		Outside Curtain	0	0	0
		Background	0	0	0
11/29/2017	921	Inside Curtain	8	9.3	5.2
		Outside Curtain	0	1.3	0
		Background	0	0	0
11/30/2017	1130	Inside Curtain	1.8	2.7	3.7
		Outside Curtain	0	0	0
		Background	0	0	0
12/1/2017	737	Inside Curtain	0.3	0	1.2
		Outside Curtain	0	0	0
		Background	0	0	0
12/2/2017	919	Inside Curtain	4.3	5.2	4.8
		Outside Curtain	1.8	2.6	1.2
		Background	0	0	0
12/3/2017	None	Inside Curtain	N/A	N/A	N/A
		Outside Curtain	N/A	N/A	N/A
		Background	N/A	N/A	N/A
12/4/2017	1017	Inside Curtain	0	0	0
		Outside Curtain	0	0	0
		Background	0	0	0
12/5/2017	1122	Inside Curtain	0	0	0
		Outside Curtain	0	0	0
		Background	0	0	0
12/6/2017	1911	Inside Curtain	28.1	19.8	14.7
		Outside Curtain	9.2	5.6	0
		Background	0	0	0
12/7/2017	1128	Inside Curtain	0.3	2.7	0.6
		Outside Curtain	0	0	0
		Background	0	0	0
12/8/2017	1836	Inside Curtain	0	0	0
		Outside Curtain	0	0	0
		Background	0	0	0
12/11/2017	1850	Inside Curtain	0	0	0
		Outside Curtain	0	0	0
		Background	0	0	0
12/12/2017	1521	Inside Curtain	5.3	7.2	6.1
		Outside Curtain	0	0	2.2
		Background	0	0	0

Prepared by: John Rice
Checked by: Matt Grove

Table 3-1
Daily Turbidity Readings
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
12/13/2017	1927	Inside Curtain	11.1	11.9	13.2
		Outside Curtain	0	0	0
		Background	0	0	0
12/14/2017	1217	Inside Curtain	2.2	1.4	1.3
		Outside Curtain	0	0	0
		Background	0	0	0
12/15/2017	1510	Inside Curtain	10.1	23.1	22.1
		Outside Curtain	1.1	0.5	0
		Background	0	0	0
12/16/2017	857	Inside Curtain	26.6	21.4	26.4
		Outside Curtain	0	0	0
		Background	0	0	0
12/19/2017	1023	Inside Curtain	14.9	16.3	10.2
		Outside Curtain	0	0	0
		Background	0	0	0
12/20/2017	1003	Inside Curtain	14.6	12.9	11.7
		Outside Curtain	0	0	0
		Background	0	0	0
12/21/2017	1127	Inside Curtain	7.7	5.7	4.7
		Outside Curtain	0.6	0	0
		Background	0	0	0
12/22/2017	1045	Inside Curtain	2.1	7.5	16.1
		Outside Curtain	0.1	0	0
		Background	0	0	0
12/26/2017	836	Inside Curtain	35.5	36.1	28.1
		Outside Curtain	2.2	4.5	6
		Background	0	0.1	0.1
12/27/2017	1142	Inside Curtain	6.7	19.1	20.9
		Outside Curtain	0	0	10.7
		Background	0	0	0
12/28/2017	937	Inside Curtain	7.6	6.9	6.3
		Outside Curtain	4.6	4.9	4.1
		Background	0	0	0
12/29/2017	851	Inside Curtain	0	0	0
		Outside Curtain	0	0	0
		Background	0	0	0
12/30/2017	840	Inside Curtain	4.3	2.5	1.3
		Outside Curtain	1.4	0.8	0
		Background	0	0	0
1/2/2018	1558	Inside Curtain	8.1	12	12.1
		Outside Curtain	4	4	4.1
		Background	0	0	1.2

Prepared by: John Rice
Checked by: Matt Grove

Table 3-1
Daily Turbidity Readings
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
1/3/2018	1037	Inside Curtain	6.8	3.4	3.1
		Outside Curtain	0	0	0
		Background	0	0	0
1/5/2018	1133	Inside Curtain	4	4.4	4
		Outside Curtain	0	0	0
		Background	0	0	0
1/8/2018	1210	Inside Curtain	3.9	9.6	11.1
		Outside Curtain	6	14.6	16.4
		Background	0	0	0
1/9/2018	2333	Inside Curtain	6	5.4	5.9
		Outside Curtain	2.7	3.1	2.6
		Background	0	0	0
1/10/2018	1228	Inside Curtain	0	0	0.1
		Outside Curtain	0	0	0
		Background	0	0	0
1/11/2018	1655	Inside Curtain	22	21.7	15.2
		Outside Curtain	5.5	5.4	2.2
		Background	0	1.1	1
1/12/2018	1144	Inside Curtain	4.6	2.9	1.7
		Outside Curtain	3	10.3	6.6
		Background	0	0	0
1/13/2018	0942	Inside Curtain	21.5	20	11.2
		Outside Curtain	15.4	12.3	11.2
		Background	13.5	12.7	12.9
1/14/2018	1122	Inside Curtain	1.7	0.7	0
		Outside Curtain	0.2	0	0
		Background	0	0	0
1/15/2018	1631	Inside Curtain	14.8	19.2	23.4
		Outside Curtain	6	3.7	2.1
		Background	0	0	0
1/16/2018	1206	Inside Curtain	0	0	0
		Outside Curtain	0	0	0
		Background	0	0	0
1/17/2018	1150	Inside Curtain	7	13.6	20.8
		Outside Curtain	3.9	10.6	17.4
		Background	0	0.2	0
1/18/2018	1600	Inside Curtain	14	13.2	16.1
		Outside Curtain	5	5	5
		Background	0	0.2	0
1/19/2018	2309	Inside Curtain	9.2	8.8	7.6
		Outside Curtain	0	0	0
		Background	0	0	0

Prepared by: John Rice
Checked by: Matt Grove

Table 3-1
Daily Turbidity Readings
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
1/20/2018	1714	Inside Curtain	4.5	5.7	8.1
		Outside Curtain	1.1	1.4	0.9
		Background	0	0	0
1/21/2018	1330	Inside Curtain	8.2	8.6	8.7
		Outside Curtain	4.4	4.1	4.9
		Background	0	0	0
1/22/2018	1559	Inside Curtain	1.1	0.2	0.6
		Outside Curtain	0	0	0
		Background	0	0	0
1/23/2018	1514	Inside Curtain	22.6	16.8	3.5
		Outside Curtain	23.5	15.4	0
		Background	7.7	3.9	6.2
1/24/2018	1234	Inside Curtain	34.2	34.8	39
		Outside Curtain	4.4	5.4	5.5
		Background	2	2.1	0
1/25/2018	1340	Inside Curtain	22.2	23.1	26.5
		Outside Curtain	3.1	4.1	3.9
		Background	1.1	1	0.1
1/26/2018	1835	Inside Curtain	2.2	12.3	16.4
		Outside Curtain	11.2	12.2	12.2
		Background	1.5	1.4	0.7
1/27/2018	1807	Inside Curtain	19.5	19.4	18.5
		Outside Curtain	13.5	15.4	16.7
		Background	0.5	0.9	1.2
1/28/2018	1143	Inside Curtain	25.1	20.6	18.6
		Outside Curtain	17.7	16	17.8
		Background	1.5	1.3	0.5
1/29/2018	1516	Inside Curtain	12.6	23.1	52.2
		Outside Curtain	4.1	11	18.2
		Background	3.6	1.4	0
1/30/2018	1017	Inside Curtain	28.2	36.6	38.8
		Outside Curtain	36.2	39.6	31.5
		Background	11.8	14.3	19.2
1/31/2018	2051	Inside Curtain	36.2	39.6	31.5
		Outside Curtain	17.6	16.5	16.9
		Background	0.5	1.1	0.9
2/1/2018	0855	Inside Curtain	22.2	25.0	25.1
		Outside Curtain	12.5	13.9	12.9
		Background	1.0	2.0	0.0
2/2/2018	2229	Inside Curtain	24.8	21.8	17.8
		Outside Curtain	15	7.4	4.4
		Background	2.7	0.1	2.0

Prepared by: John Rice
Checked by: Matt Grove

Table 3-1
Daily Turbidity Readings
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
2/3/2018	1620	Inside Curtain	21.2	21	34.2
		Outside Curtain	12	12	12.5
		Background	1.2	0	0
2/4/2018	0958	Inside Curtain	23.7	25.7	22.1
		Outside Curtain	5.4	4.4	9.6
		Background	3.3	7.4	12.5
2/5/2018	0958	Inside Curtain	12.1	10.7	11
		Outside Curtain	4.1	3.9	3.4
		Background	5.9	6.6	2.7
2/6/2018	1535	Inside Curtain	8.6	7.8	3.7
		Outside Curtain	0.5	0.3	0
		Background	2.4	2.7	1.3
2/7/2018	1814	Inside Curtain	8.4	9.1	8.8
		Outside Curtain	4.6	7.2	9.2
		Background	0	0	0
2/8/2018	1301	Inside Curtain	15.1	18.2	20.2
		Outside Curtain	4.5	4.6	4
		Background	1.5	0	0
2/9/2018	0448	Inside Curtain	15.1	11	27.5
		Outside Curtain	2.1	3.8	2.2
		Background	3.9	4.4	3.8
2/10/2018	1115	Inside Curtain	33.3	35.7	41.1
		Outside Curtain	11.1	5	5.5
		Background	0	0	0
2/11/2018	0807	Inside Curtain	4.7	3	0.7
		Outside Curtain	0.3	0.2	0
		Background	1.1	1.2	2.9
2/12/2018	0807	Inside Curtain	4.7	3	0.7
		Outside Curtain	0.3	0.2	0
		Background	1.1	1.2	2.9
2/13/2018	1334	Inside Curtain	5.2	7.0	8.1
		Outside Curtain	0	0	0
		Background	0	0	0
2/14/2018	1954	Inside Curtain	6.8	7.1	6.5
		Outside Curtain	2.3	1.1	0.9
		Background	0.4	0	0
2/15/2018	1406	Inside Curtain	12.5	13.9	15.5
		Outside Curtain	2.0	1	0.6
		Background	0	0	0
2/16/2018	1330	Inside Curtain	5.8	7.2	6.6
		Outside Curtain	1.5	3.5	2.7
		Background	0.3	0.5	0.8

Table 3-1
Daily Turbidity Readings
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
2/17/2018	1330	Inside Curtain	8	11.2	12.7
		Outside Curtain	0	0	0
		Background	5.6	2.8	0
2/18/2018	0209	Inside Curtain	12.9	12.3	3
		Outside Curtain	8.4	7	5.5
		Background	0.6	0	1.6
2/19/2018	None	Inside Curtain	N/A	N/A	N/A
		Outside Curtain	N/A	N/A	N/A
		Background	N/A	N/A	N/A
2/20/2018	1210	Inside Curtain	0	0	0
		Outside Curtain	0	0	0
		Background	0	0	0
2/21/2018	2021	Inside Curtain	10.4	11.3	9.5
		Outside Curtain	9.4	9	8.3
		Background	1.3	0	0
2/22/2018	2045	Inside Curtain	13.3	11.3	9.07
		Outside Curtain	6.7	7.8	5.3
		Background	0.8	0	0
2/23/2018	1015	Inside Curtain	5.5	6.2	10.0
		Outside Curtain	2.2	3.0	3.1
		Background	0.0	0.0	0.0
2/24/2018	1510	Inside Curtain	2	1.8	2.3
		Outside Curtain	0	0	0
		Background	0	0	0
2/25/2018	None	Inside Curtain	N/A	N/A	N/A
		Outside Curtain	N/A	N/A	N/A
		Background	N/A	N/A	N/A
2/26/2018	1845	Inside Curtain	12.3	11.8	10.4
		Outside Curtain	8.2	6.5	5.8
		Background	0	0	0
2/27/2018	1019	Inside Curtain	4.1	3.2	1.9
		Outside Curtain	1.7	1.2	2.5
		Background	0	0	0
2/28/2018	0928	Inside Curtain	9.3	8.9	8.2
		Outside Curtain	4.3	4.2	4.2
		Background	0	0	0
3/1/2018	1527	Inside Curtain	10.7	11.3	9.8
		Outside Curtain	5.1	3.2	2.5
		Background	1	1	0.8
3/2/2018	None	Inside Curtain	N/A	N/A	N/A
		Outside Curtain	N/A	N/A	N/A
		Background	N/A	N/A	N/A

Prepared by: John Rice
Checked by: Matt Grove

Table 3-1
Daily Turbidity Readings
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
3/3/2018	2320	Inside Curtain	9.9	9.8	10.1
		Outside Curtain	3.5	6.1	5.1
		Background	0.2	0	0.1
3/4/2018	1036	Inside Curtain	2.2	3.1	4.5
		Outside Curtain	1	2.1	1.5
		Background	0	0	0.1
3/5/2018	1100	Inside Curtain	2.2	2.6	1.8
		Outside Curtain	1.3	0	0
		Background	0	0	0
3/6/2018	0801	Inside Curtain	2.5	2.3	1.5
		Outside Curtain	1.2	0.5	0
		Background	0	0	0
3/7/2018	0949	Inside Curtain	0.0	0.0	0.0
		Outside Curtain	0.0	0.0	0.0
		Background	0.0	0.0	0.0
3/8/2018	1104	Inside Curtain	0.1	0.0	0.0
		Outside Curtain	0.0	0.0	0.0
		Background	0.0	0.0	0.0
3/9/2018	0832	Inside Curtain	0.0	0.2	0.0
		Outside Curtain	0.0	0.0	0.0
		Background	0.0	0.0	0.0
3/10/2018	0515	Inside Curtain	10.7	0.1	0
		Outside Curtain	7.7	7.4	0.6
		Background	0.7	0	0
3/11/2018	None	Inside Curtain	N/A	N/A	N/A
		Outside Curtain	N/A	N/A	N/A
		Background	N/A	N/A	N/A
3/12/2018	1014	Inside Curtain	1.4	1.5	1
		Outside Curtain	0	0	0
		Background	0	0	0
3/13/2018	None	Inside Curtain	N/A	N/A	N/A
		Outside Curtain	N/A	N/A	N/A
		Background	N/A	N/A	N/A
3/14/2018	1209	Inside Curtain	0.4	1.4	2.1
		Outside Curtain	0	0	0
		Background	0	0	0
3/15/2018	1145	Inside Curtain	0.7	0.0	0.0
		Outside Curtain	0.0	0.0	0.0
		Background	0.0	0.0	0.0
3/16/2018	1409	Inside Curtain	0.3	1.2	2.2
		Outside Curtain	0.0	0.1	0.2
		Background	0.0	0.0	0.0

Prepared by: John Rice
Checked by: Matt Grove

Table 3-1
Daily Turbidity Readings
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

Date	Time	Area	Surface (NTU)	Mid-Depth (NTU)	Full Depth (NTU)
3/17/2018	1730	Inside Curtain	0.5	0.1	0.1
		Outside Curtain	0	0	0
		Background	0	0	0
3/18/2018	None	Inside Curtain	N/A	N/A	N/A
		Outside Curtain	N/A	N/A	N/A
		Background	N/A	N/A	N/A
3/19/2018	1600	Inside Curtain	1.3	1.1	0.8
		Outside Curtain	0.1	0.2	0
		Background	0	0	0
3/20/2018	0720	Inside Curtain	0	0	0
		Outside Curtain	0	0	0
		Background	0	0	0

Notes:
N/A = Not Applicable. No turbidity readings were taken on a specific day.

Table 3-2
Turbidity Protocol for Opening the Turbidity Curtain
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

ITEM	OPERATION	BACKGROUND (BG) L OCATION	TEST LOCATION	<50 NTU inside curtain	>50 NTU inside but <50 NTU from BG	>50 NTU inside but <100 NTU from BG	>100 NTU from BG	>100 NTU from BG REPEAT
1	**Curtain Opening (work ongoing)**	Obtain daily background water quality if reading has not been collected.	mid-depth, 10ft inside curtain	OK TO PROCEED	OK TO PROCEED	OK TO PROCEED during incoming tide. DO NOT OPEN during outgoing tide. NOTIFY superintendent	DO NOT OPEN RE-TEST turbidity. NOTIFY superintendent and Wood inspector	DO NOT OPEN AND CEASE OPERATIONS RE- TEST turbidity every 15 minutes until levels are acceptable. NOTIFY superintendent and Wood inspector
2	**Curtain Opening (non-work)**	Obtain daily background water quality if reading has not been collected.	mid-depth, 10ft inside curtain	OK TO PROCEED	OK TO PROCEED	OK TO PROCEED during incoming tide. DO NOT OPEN during outgoing tide. NOTIFY superintendent.	DO NOT OPEN RE-TEST turbidity. IDENTIFY source of turbidity. NOTIFY superintendent and Wood inspector.	DO NOT OPEN RE-TEST turbidity every 15 minutes until levels are acceptable. IDENTIFY source of turbidity. NOTIFY superintendent and Wood inspector.
3	**Visible plume outside curtain**	Obtain daily background water quality if reading has not been collected.	mid-depth, 10ft inside curtain	OK TO PROCEED INSPECT turbidity curtain and repair as needed. NOTIFY superintendent.	OK TO PROCEED INSPECT turbidity curtain and repair as needed. NOTIFY superintendent.	OK TO PROCEED during incoming tide. DO NOT OPEN during outgoing tide. INSPECT turbidity curtain and repair as needed. NOTIFY superintendent and Wood inspector.	DO NOT OPEN AND CEASE OPERATIONS INSPECT turbidity curtain and repair as needed. IDENTIFY source of turbidity. If source is from site operations, wait for plume to subside prior to resuming work and modify operations when resumed. RE-TEST turbidity. NOTIFY superintendent, Wood inspector, and Wynn.	DO NOT OPEN AND CEASE OPERATIONS INSPECT turbidity curtain and repair as needed. IDENTIFY source of turbidity. If source is from site operations, wait for plume to subside prior to resuming work and modify operations when resumed. RE-TEST turbidity every 15 minutes until levels are acceptable. NOTIFY superintendent, Wood inspector, and Wynn.

Prepared by: John Rice
Checked by: Matt Grove

Table 3-3
Water Treatment System Effluent Summary
Phase IV As-Built Construction and Final Inspection Report
RTN 3-13341

Parameter	Criteria	Source of Criteria	10/18/2017	10/25/2017	11/1/2017	11/9/2017	11/15/2017	12/13/2017	1/11/2018	2/14/2018
Dissolved Arsenic	36 ug/L	NRWQC (SW)	9	<25	<25	<5	NA	<5	<50	<25
Dissolved Lead	8.1 ug/L	NRWQC (SW)	<5	11.7	<5	<5	<5	<1	<40	<1
Dissolved Mercury	0.94 ug/L	NRWQC (SW)	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dissolved Vanadium	160 ug/L	chronic (Birge, 1978)	<20	<10	<100	<20	<20	<20	<20	<20
PCBs	0.03 ug/L	NRWQC (SW)	<0.05	<0.05	<0.10	<0.09	<0.09	<0.09	<0.10	<0.10
EPH Fractions										
C9-C18 aliphatics	1800 mg/L	MassDEP EPH/VPH Guidance	<0.093	<0.093	<0.094	<0.093	<0.093	<0.102	<0.096	<0.100
C19-C36 aliphatics	2,100 mg/L		<0.093	<0.093	<0.94	<0.093	<0.093	<0.102	<0.096	<0.100
C11-C22 aromatics	Monitor only		<0.0935	<0.0935	<0.943	<0.0935	<0.0935	<0.102	<0.0962	<0.100
bis(2-ethylhexyl)phthalate	160 ug/L	Chronic LOEC (Rhodes et al., 1995)	11.3	<5.6	<6	7.1	NA	<5.8	<5.9	<5.8
pH	6.5 to 8.5 S.U.	Mass SWQC	8.26	7.9	7.91	8.07	7.91	7.74	7.8	7.82
TSS	Monitor only		22	27	36	13	43	30	27	48

NRWQC = National Recommended Water Quality Criteria
NA = Not analyzed due to sampler error.

Prepared by: John Rice
Checked by: Matt Grove

Table 3-4
Cap Material Specifications
Phase IV As-Builts Construction and Final Inspection Report
RTN 3-13341

TYPE A SAND SIEVE ANALYSIS (% PASSING)				
	Sieve Opening Size			
TYPE A – COARSE SAND	**#8**	**#10**	**#20**	**#200**
Original Specification	100	68-88	6-26	0-10
Revised Specification	75	63-88	6-48	0-10

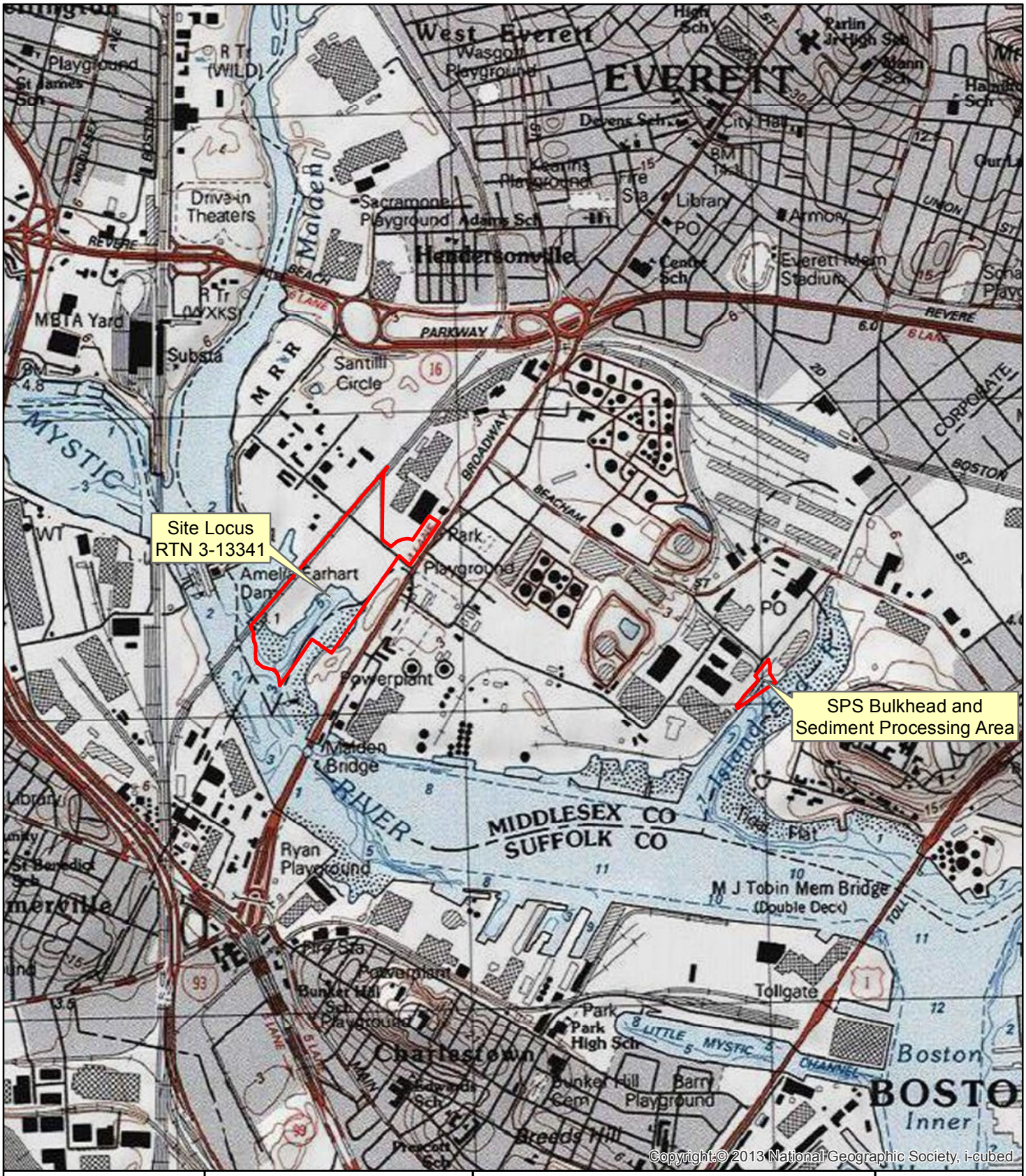
TYPE B SAND SIEVE ANALYSIS (% PASSING)							
	Sieve Opening Size						
TYPE B – GRAVEL	**1"**	**1/2"**	**3/8"**	**#4**	**#30**	**#50**	**#200**
Original Specification	100	---	68-88	6-26	---	---	0-10
Revised Specification	100	50-85	---	40-75	18	8-28	0-10

TYPE C SAND SIEVE ANALYSIS (% PASSING)					
	Sieve Opening Size				
TYPE C – SILTY SAND	**#4**	**#10**	**#10**	**#40**	**#200**
Original Specification	95-100	90-95	---	---	50-60
Revised Specification	95-100	92.6	90-95	75-90	50-60

TYPE MA BLENDED SAND SIEVE ANALYSIS (% PASSING)					
	Sieve Opening Size				
TYPE MA – BLENDED SAND	**1/2"**	**#8**	**#10**	**#20**	**#200**
Original Type A Specification	---	100	68-88	6-26	0-10
Blended Sand Specification	100	40-55	35-55	6-26	0-10

Prepared by: John Rice
Checked by: Matt Grove

FIGURES



amec foster wheeler

Former Everett Staging Yard

One Broadway, Everett, MA
RTN 3-13341

Site Location Map

SCALE:	DATE:	PROJECT:
1 inch = 2,000 feet	09/06/18	3651160042

DRAWN BY: E. Gardiner | CHECKED BY: J. Rice

LOCATION:
P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig1-1_Sed_SiteLocus.mxd

FIGURE NO:
1-1

Source:
1) Approximate Parcel Boundary and Mean High Water datalayers developed from plans or electronic files provided by"Feldman Land Surveyors" entitled " Existing Conditions" Dated 02-20-2015, Original scale 1"=20', Drawing NO. 14517, CAD file, "14517-EXDRAFT-03-20-15.DWG

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Legend

- Disposal Site Boundary in Sediment
- Approximate Parcel Boundary
- Remediation Area
- Salt Marsh
- Deteriorated Barge
- Mean High Water (+4.35 feet NAVD88)
- Pre-Construction Mean Low Water (-5.21 feet NAVD88)

N

0 120 240 Feet

Pre-Remediation Site Plan

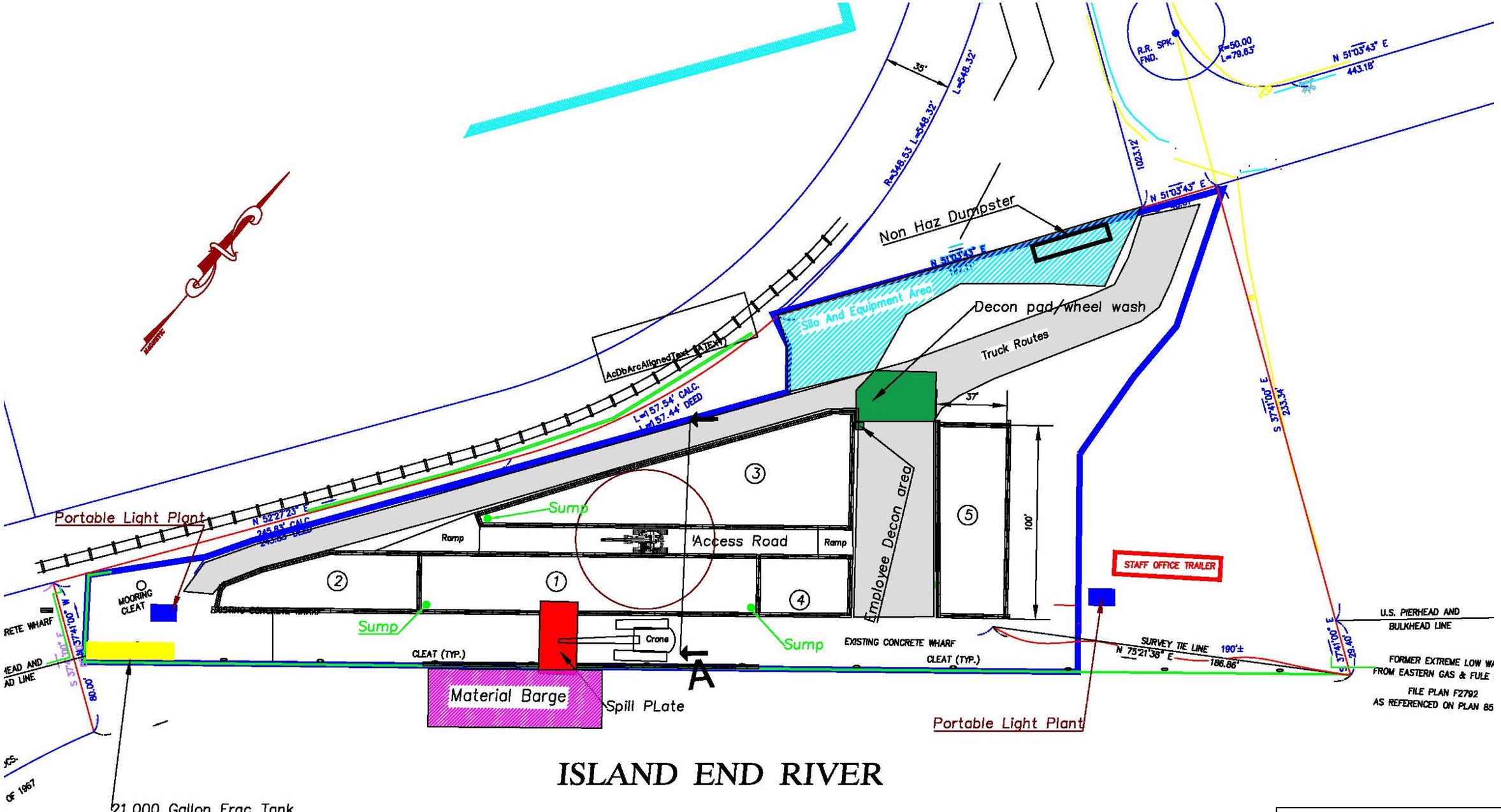
Former Everett Staging Yard, One Broadway, Everett, MA
RTN 3-13341

Drawn By: E. Gardiner	Checked By: J. Rice
Project Number: 3651160042.003	Date: 11/1/2018

FIGURE NO:

1-2

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig1-2_Sed_SitePlan.mxd



Source:
Figure created by Charter Environmental (titled SPS Bulkhead Mixing Big Layout), dated 09/14/2017.

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NOTE: NOT TO SCALE

Sediment Processing Area

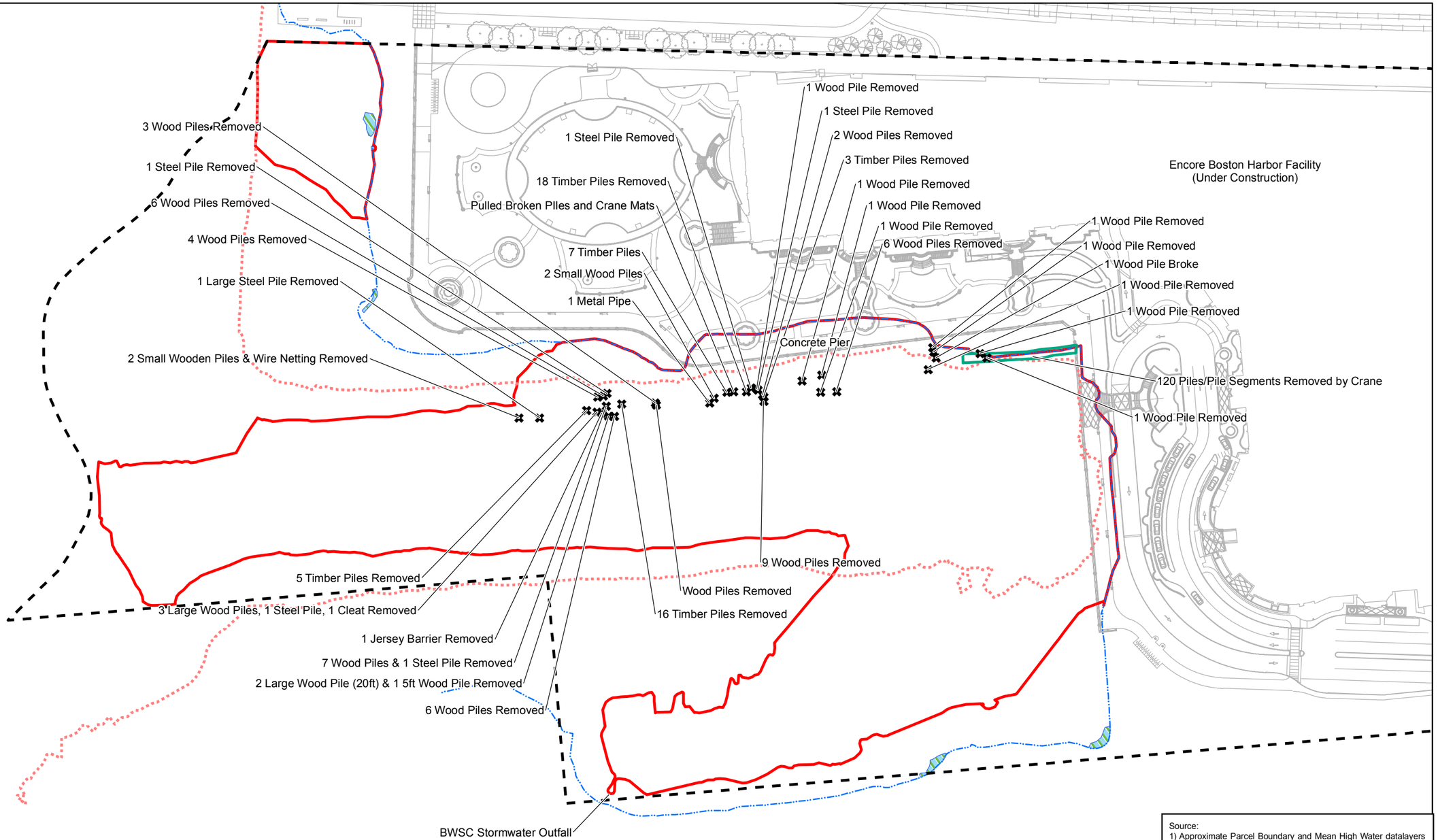
Former Everett Staging Yard, One Broadway, Everett, MA
RTN 3-13341

Drawn By: E. Gardiner	Checked By: J. Rice
Project Number: 3651160042.003	Date: 9/4/2018

FIGURE NO:

3-1

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-1_Sed_SedimentProcessingArea.mxd



Source:
1) Approximate Parcel Boundary and Mean High Water datalayers developed from plans or electronic files provided by"Feldman Land Surveyors" entitled " Existing Conditions" Dated 02-20-2015, Original scale 1"=20', Drawing NO. 14517, CAD file, "14517-EXDRAFT-03-20-15.DWG
2) Piling Locations approximated based drawing provided by Charter Environmental entitled "Debris Removal As-Built" Dated 02-01-2018.

amec foster wheeler

Legend

- Piling Locations
- Disposal Site Boundary in Sediment
- Approximate Parcel Boundary
- 120 Piles/Pile Segments Removed by Crane
- Salt Marsh
- Mean High Water (+4.35 feet NAVD88)
- Pre-Construction Mean Low Water (-5.21 feet NAVD88)

N

0 120 240 Feet

Piling Locations

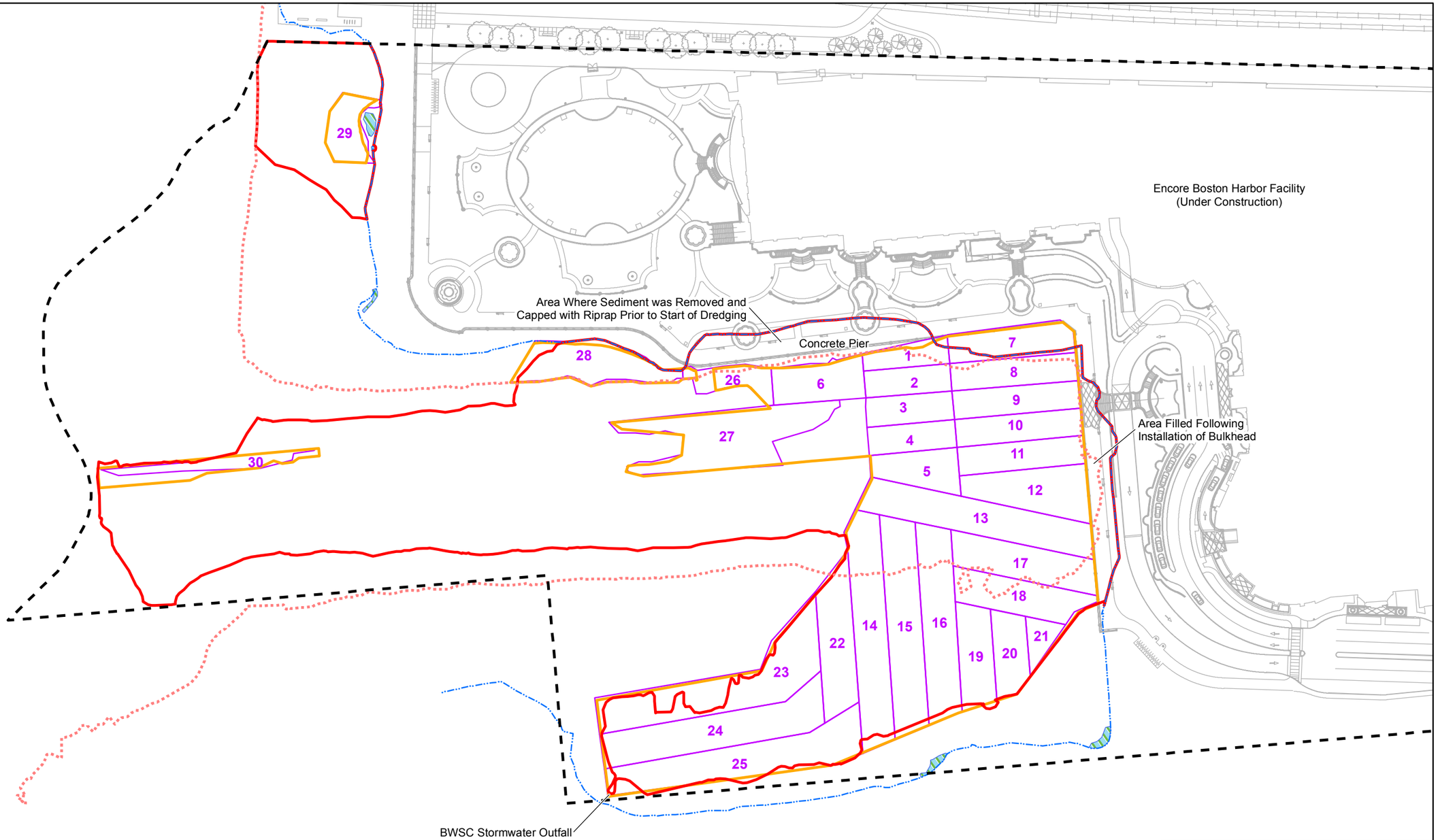
Former Everett Staging Yard, One Broadway, Everett, MA
RTN 3-13341

Drawn By: E. Gardiner	Checked By: J. Rice
Project Number: 3651160042.003	Date: 9/4/2018

FIGURE NO:

3-2

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-2_PilingLocations.mxd



Source:
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amec foster wheeler

Legend

- Disposal Site Boundary in Sediment
- Approximate Parcel Boundary
- Salt Marsh
- Dredge Limits
- Dredge Cell
- Mean High Water (+4.35 feet NAVD88)
- Pre-Construction Mean Low Water (-5.21 feet NAVD88

N

0 120 240 Feet

Sediment Dredge Cell Layout

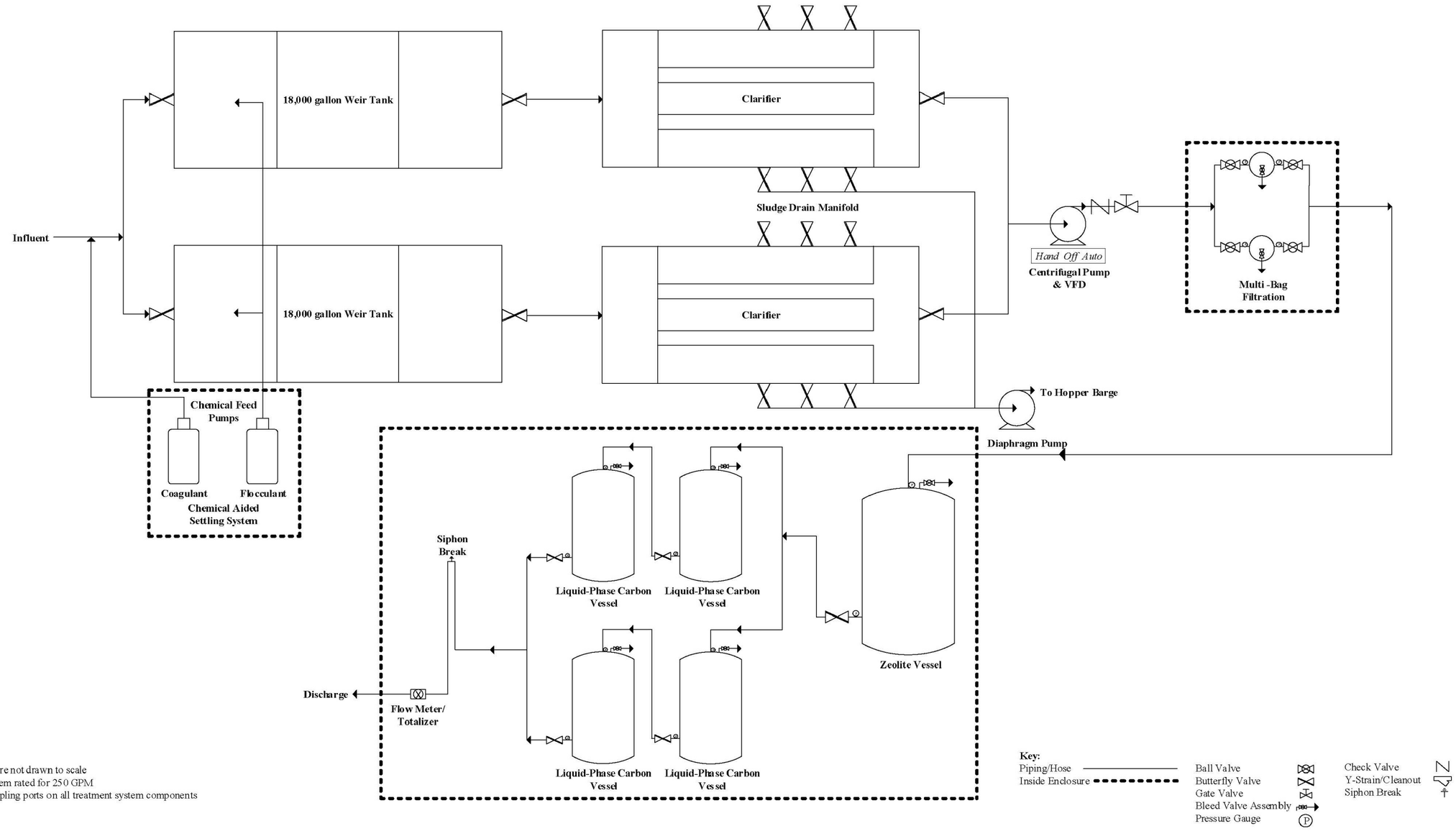
Former Everett Staging Yard, One Broadway, Everett, MA
RTN 3-13341

Drawn By: E. Gardiner	Checked By: J. Rice
Project Number: 3651160042.003	Date: 9/6/2018

FIGURE NO:

3-3

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-3_SedimentDredgeCellLayout.mxd



Notes:
1. Figure not drawn to scale
2. System rated for 250 GPM
3. Sampling ports on all treatment system components

Source:
Figure created by Lockwood Remediation Technologies, LLC (titled Water Treatment Facilities), not dated.

amec foster wheeler

NOTE: NOT TO SCALE

Water Treatment System Schematic

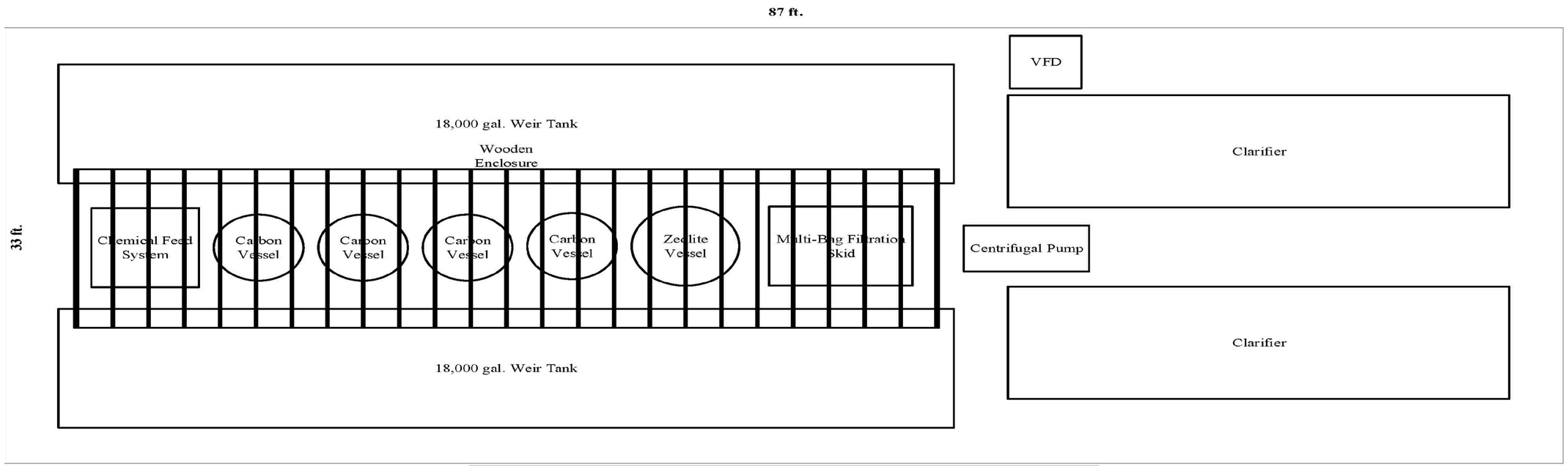
Former Everett Staging Yard, One Broadway, Everett, MA
RTN 3-13341

Drawn By: E. Gardiner	Checked By: J. Rice
Project Number: 3651160042.003	Date: 9/4/2018

FIGURE NO:

3-4

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-4_WaterTreatment SystemSchematic.mxd



Water Treatment System Equipment Weights & Dimensions

Wynn Casino Dredge

Equipment	*Quantity*	*Total Dry Weight (lbs.)*	*Total Wet Weight (lbs.)*	*Dimensions*
18,000 gal. Weir Tank	2	60,000	360,000	50' x 9'
Clarifier	2	24,000	190,000	28' x 8.5'
Chemical Feed System	1	200	2,500	6' x 6'
Multi Bag Filter Skid	1	2,000	3,500	6' x 8'
Zeolite Vessel - 10,000 lbs. of Media	1	13,000	21,000	6' dia.
Liquid Carbon Vessel - 3,000 lbs. of Media	4	26,000	40,000	5' dia.
Centrifugal Pump & VFD	1	1,000	1,500	7' x 3.5'
Variable Frequncy Drive (VFD)	1	300	300	4' x 4'
Wooden Enclosure	1	5,000	5,000	45'x12'
	TOTAL	**131,500**	**623,800**	

0 ft. 3 ft. 5 ft. 10 ft.

Source:
Figure created by Lockwood Remediation Technologies, LLC (titled Water Treatment System Layout), not dated.

amec foster wheeler

NOTE: NOT TO SCALE

Water Treatment System Layout

Former Everett Staging Yard, One Broadway, Everett, MA
RTN 3-13341

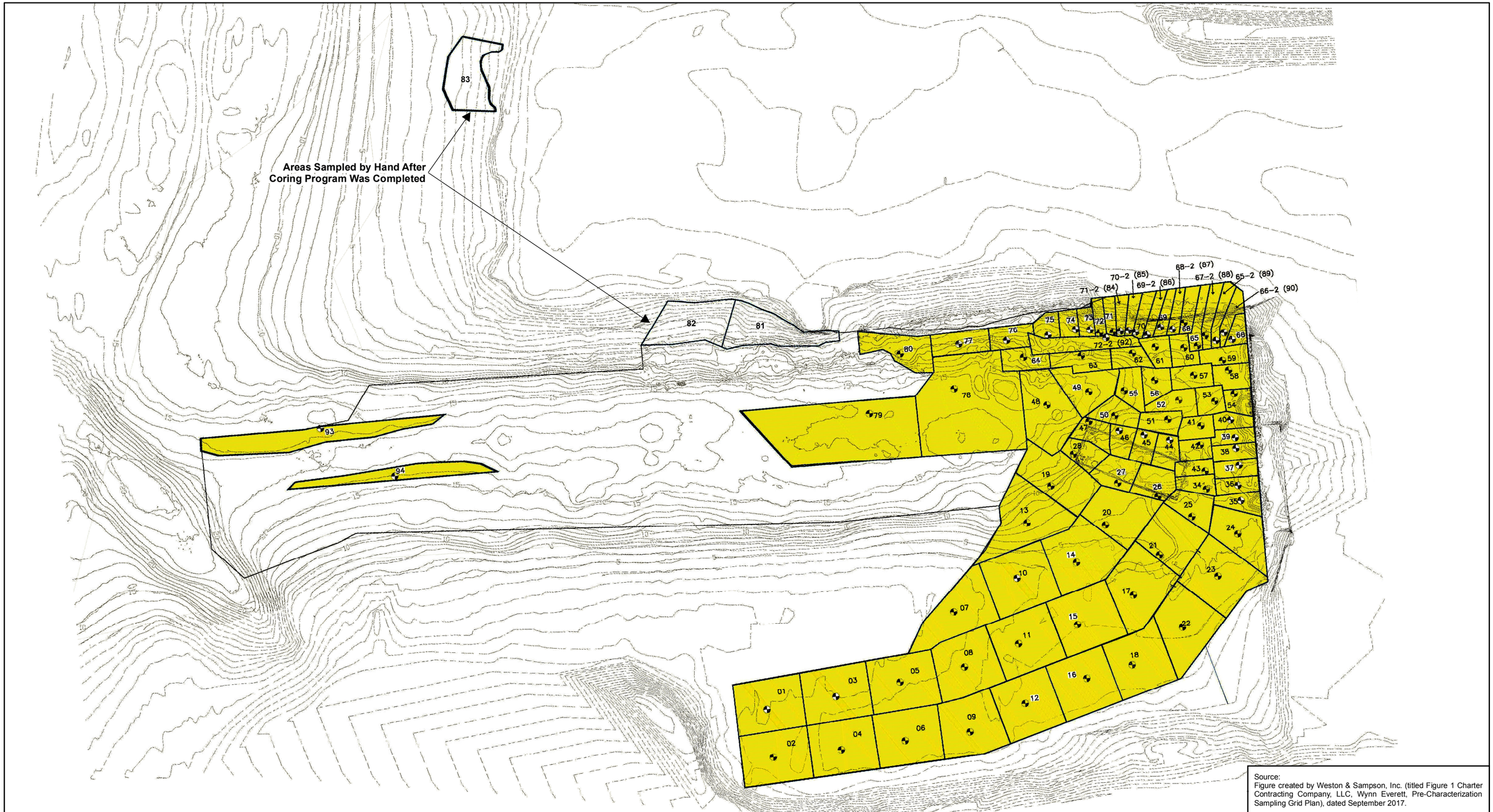
Drawn By: E. Gardiner | Checked By: J. Rice

Project Number: 3651160042.003 | Date: 9/4/2018

FIGURE NO:

3-5

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-5_WaterTreatment SystemLayout.mxd



Source:
Figure created by Weston & Sampson, Inc. (titled Figure 1 Charter Contracting Company, LLC, Wynn Everett, Pre-Characterization Sampling Grid Plan), dated September 2017.

amec foster wheeler

Legend

Sediment Cell Area

Sediment Core Location

N

0 120 240 Feet

Pre-Characterization Sampling Locations

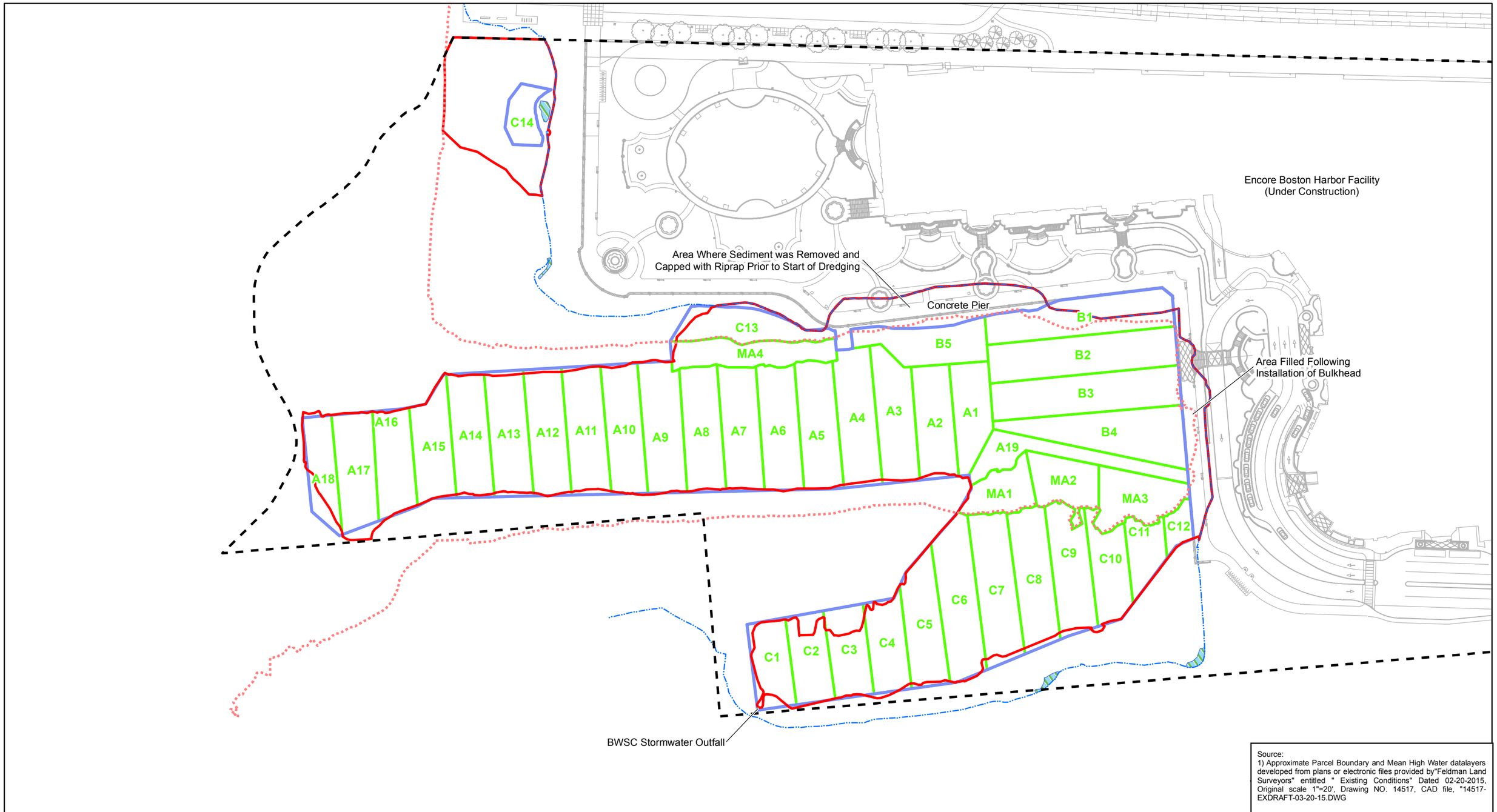
Former Everett Staging Yard, One Broadway, Everett, MA
RTN 3-13341

Drawn By: E. Gardiner	Checked By: J. Rice
Project Number: 3651160042.003	Date: 10/30/2018

FIGURE NO:

3-6

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-6_Pre-CharacterizationSamplingLocations.mxd



Source:
1) Approximate Parcel Boundary and Mean High Water datalayers developed from plans or electronic files provided by"Feldman Land Surveyors" entitled " Existing Conditions" Dated 02-20-2015, Original scale 1"=20', Drawing NO. 14517, CAD file, "14517-EXDRAFT-03-20-15.DWG

amec foster wheeler

Legend

- Disposal Site Boundary in Sediment
- Approximate Parcel Boundary
- Salt Marsh
- Cap Limits
- Cap Cells
- Mean High Water (+4.35 feet NAVD88)
- Pre-Construction Mean Low Water (-5.21 feet NAVD88)

N

0 120 240 Feet

Sediment Capping Cell Layout

Former Everett Staging Yard, One Broadway, Everett, MA
RTN 3-13341

Drawn By: E. Gardiner	Checked By: J. Rice
Project Number: 3651160042.003	Date: 9/4/2018

FIGURE NO:

3-7

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-7_SedimentCappingCellLayout.mxd

APPENDIX A

Selected Photographs

PHOTO 1:

Installation of absorbent boom behind turbidity curtain.

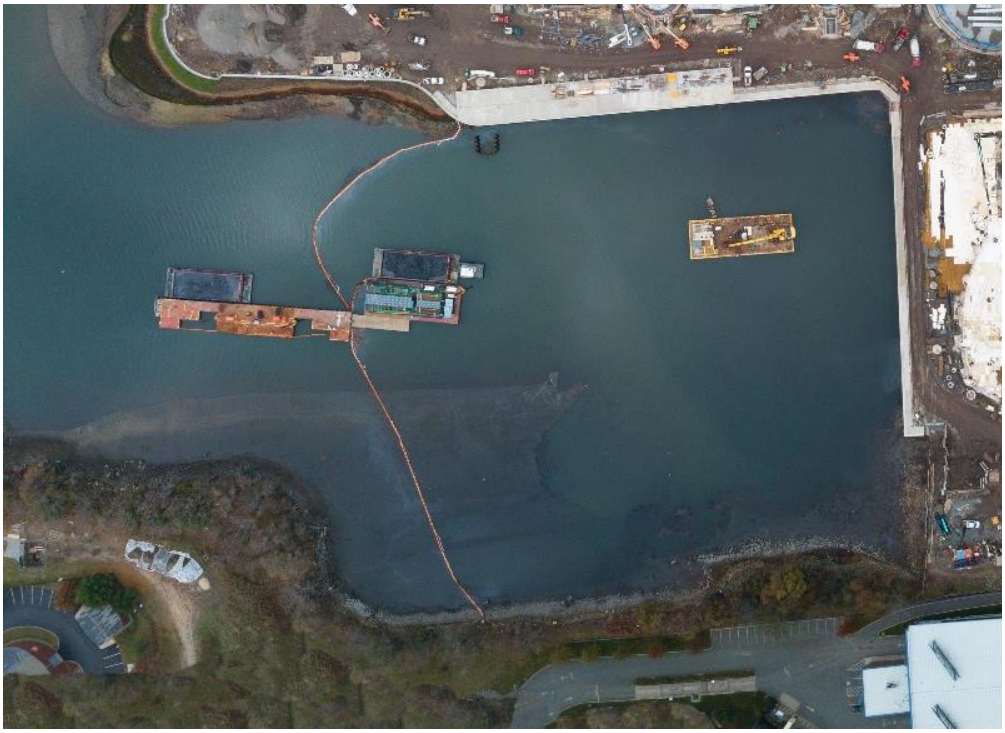


PHOTO 2:

Aerial view showing layout of turbidity curtain from November 15, 2017.

PHOTO 3:

View from shore looking east at Barges 4, 3, 1 (partially submerged), and 2 (with structures).

PHOTO 4:

Demo of Barge #4 by land-based equipment.

PHOTO 5:

Demo of Barge #3 by land-based equipment.

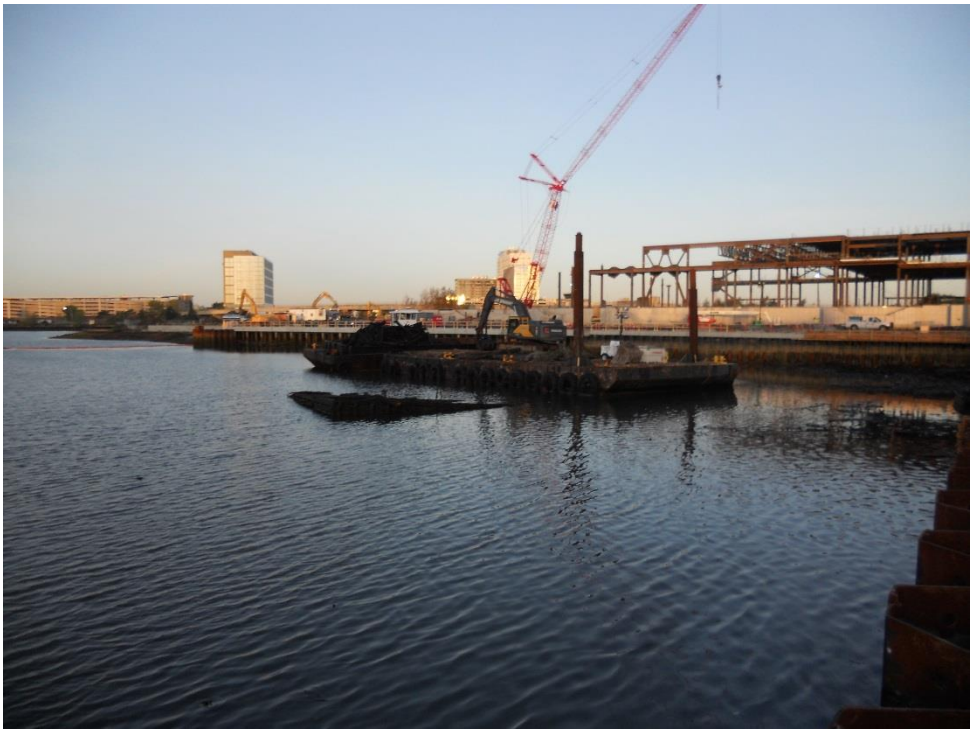


PHOTO 6:

Demo of Barge #1 (submerged) by water-based equipment.

PHOTO 7:

Barge with water treatment system being relocated by tug boat.

PHOTO 8:

Water treatment system barge.

PHOTO 9:

Dredging near bulkhead.

PHOTO 10:

Dredging in tidal flats at high tide.

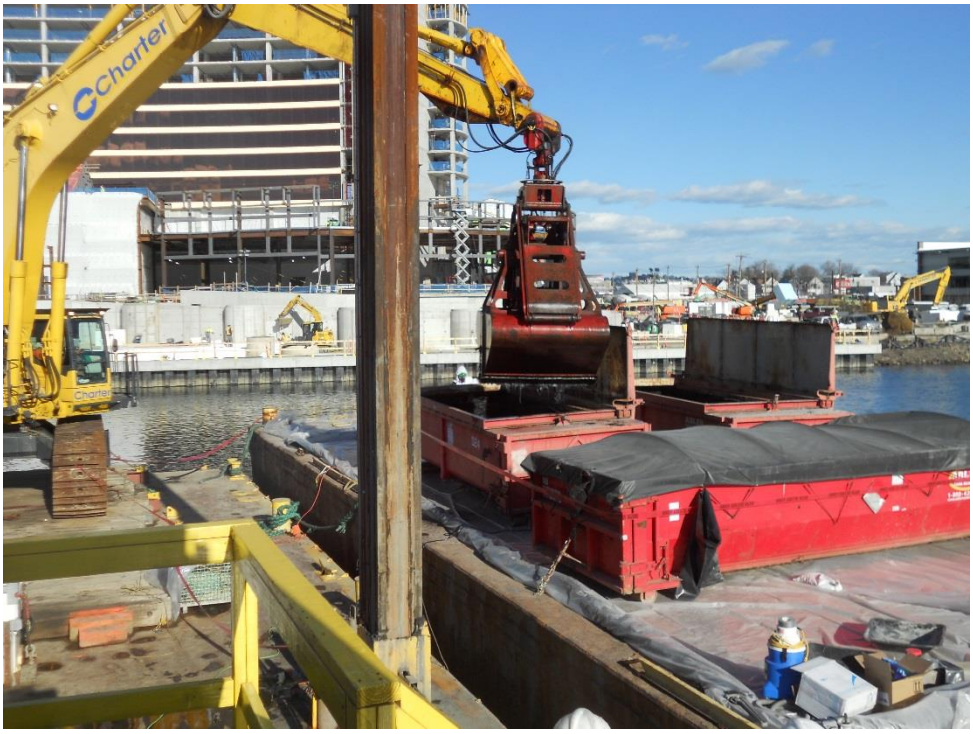


PHOTO 11:

Placing asbestos-impacted sediments into lined dewatering boxes.

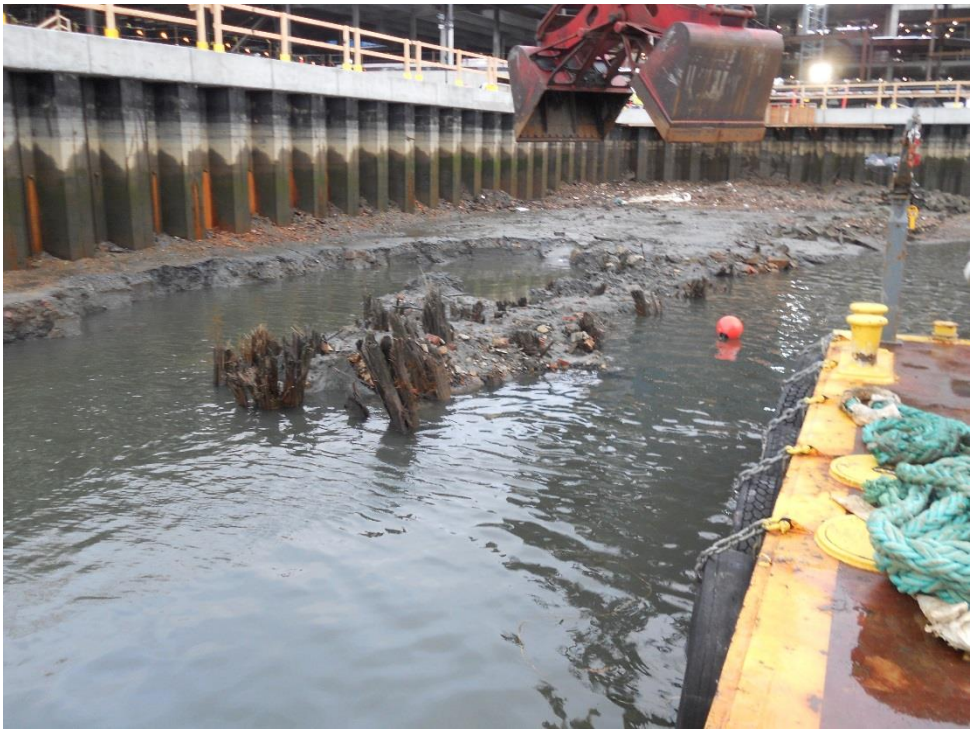


PHOTO 12:

Area with >100 wooden piles in northeast corner of dredge area.

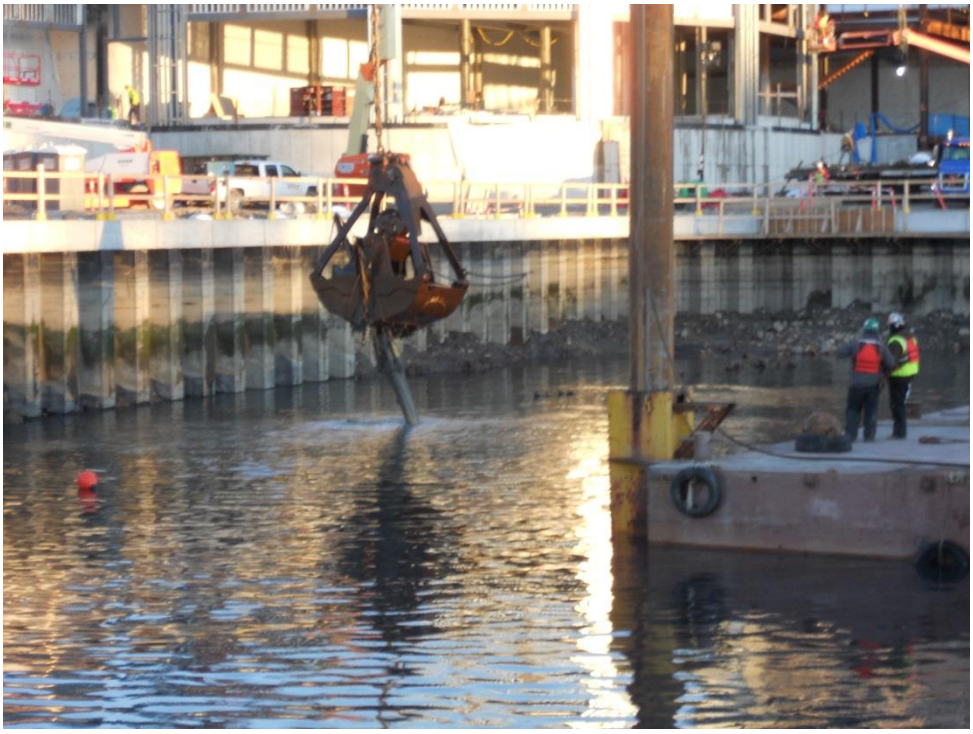


PHOTO 13:

Wooden pile being removed by crane.

PHOTO 14:

Wooden pile being removed by crane.

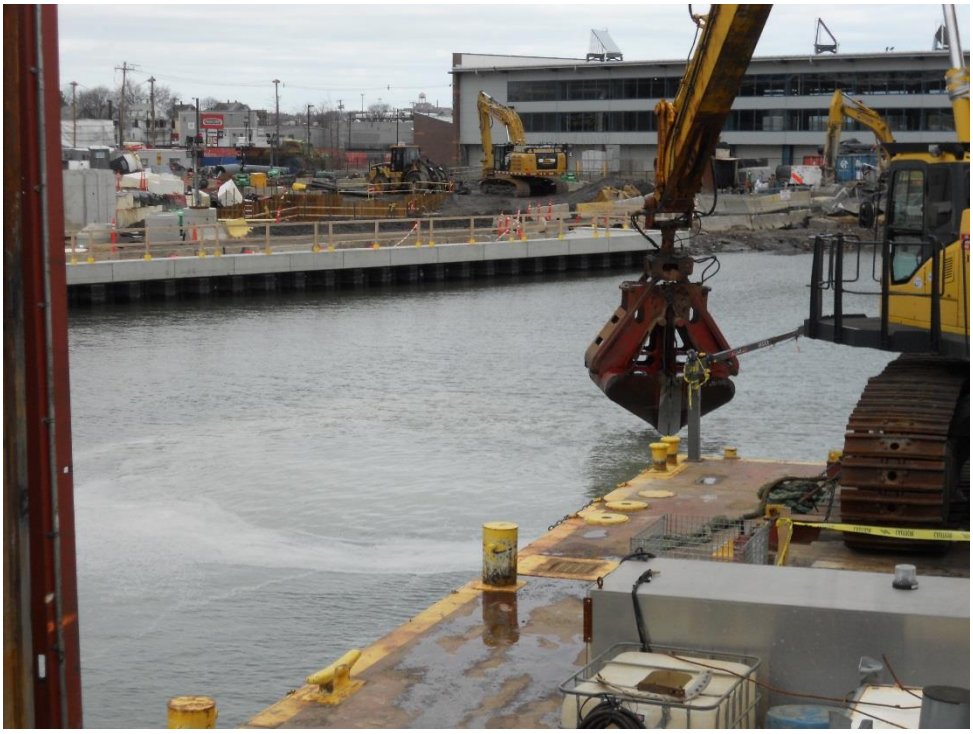


PHOTO 15:

Placement of cap material in turning basin.

PHOTO 16:

Erosion of cap material south of the wharf (capping cell C13).

PHOTO 17:

Continued erosion of cap material south of the wharf (capping cell C13).

PHOTO 18:

Grade stake layout for cap material in cell C13

PHOTO 19:

Placement of rounded ¾-inch stone base layer south of wharf (capping cell C13).

PHOTO 20:

Fabric installation at base of channel in cell C13

PHOTO 21:

Coarse channel fill capping in cell C13

PHOTO 22:

Final cap surface in area south of wharf (capping cell C13).

PHOTO 23:

Initial layout of outlet protection (armor stone) at BWSC outfall.

PHOTO 24:

View of sediment offload area from Island End River.

PHOTO 25:

View of sediment offload area from dock showing spill plate leading to sediment barge.

PHOTO 26:

Excavator on access road between sediment bins in processing area.

APPENDIX B

Barge Demolition Asbestos Documentation

amec foster wheeler

271 Mill Road, Chelmsford, MA
01824
Tel. (978) 692-9090

DAILY FIELD REPORT (DFR)

					DFR No.		
					Page No	1 of 2	
Time On Site	**08:30**	Time Off Site	**10:15**	Total Hours On Site	**1.45 hrs**	Date	**09/18/17**
Travel Time		Reason for Travel	**To Inspect for and Collect Suspect ACM (Asbestos Containing Material) on Abandoned Barge**			Weather	**Mostly cloudy, temps in 70's**
Project Name	**Wynn Construction Oversight**				Project No.	**3651170065**	
AMEC Foster Wheeler On-Site	**Mark Maggiore (08:30-10:15)**				Permit No.		
Other Personal On-Site:	SPS New England, Inc and Vinagro				Location	**Everett, MA**	

Personnel On Site
Greg Bashaw (SPS New England- Boat Operator)
Joe Pasquerella and 2 others (Vinagro)

Equipment
Moterized Skiff for transport

Work Performed
A tailgate safety meeting was conducted prior to the start of work. Group traveled to the abandoned barge via motorized skiff.

The barge was fitted with a large steel space and a smaller wooden structure with a concrete slab on the deck of the barge. Both structures were in poor condition and open to the elements with piles of debris inside and outside of the structures. Both structures and the debris piles were inspected within safety limits. Certain areas inside the structures and portions of the debris piles were not accessed due to safety concerns.

Suspect ACM materials were noted inside and outside the structures as noted below:

- Asphalt roofing and felt paper was mixed with wooded debris outside the wooden structure. Three samples were collected: two from a debris pile in between the two structures and one from a debris pile in front of the wooden structure.
- Window glazing was observed on two of the outside windows as well as some broken windows inside the wooden structure. Two samples were collected, one at window 1 (east side) and one on window 2 (behind the wooden structure). Due to safety hazards, no samples of the broken windows inside the wooden structure were collected.
- There were two electrical service panels, one in the wooden structure and one in the metal structure. No possible transite materials were noted inside the panel in the metal structure. Very little insulation was present behind the panel in the wooden structure. A sample was taken from insulation behind the electrical panel inside the wooden structure.
- Insulation along the walls of the metal structure and inside a conduit outside of the metal structure was collected.
- Insulation from inside piping in the debris pile outside the wooden structure was collected.
- Gasket flanges and belts in debris piles inside the metal structure were collected.

Sample ID #	Description	Location/Area
Barge 1-A	Black roofing material	Debris pile outside wooden structure
Barge 1-B	Black misc roofing material	Debris pile in between the two structures
Barge 2	Black tar/roofing material	Debris pile in between the two structures
Barge 3-A	White window glazing	Window 1/Wooden Structure
Barge 3-B	White window glazing	Window 2/Wood Structure
Barge 4	Insulation Electrial Panel	Inside Wooden structure
Barge 5	Insulation inside metal structure	Inside Metal structure
Barge 6	Insulation inside conduit	Debris pile between the two structures

Barge 7	Insulation inside piping	Debris pile outside wooden structure
Barge 8	Flange gasket	Debris pile inside metal structure
Barge 9	Belt	Debris pile inside metal structure

Potential hazardous materials noted on the barge included flaking paint (potentially lead-based pait), broken light fixtures (PCB ballasts), and numerous small containters including aerosol cans.

Quality Control/Inspections Performed Took photos of work performed. See Photo log.Samples were collected inside 2 mil plastic baggies and placed in a FedEx box along with a signed Chain of Custody form on a 24 turn around time. The samples were shipped to CEI Labs in Cary,NC prioty overnight .

AMEC Foster wheeler Onsite: Mark Maggiore Date:09-18-17	Signature:	Applicable Specifications	Rev.
		N/A	
Reviewed By : Matt Grove Date: 09-20-17	Signature	**Applicable Drawing No.**	Rev.
		N/A	

September 20, 2017

AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

CLIENT PROJECT: Wynn Construction Oversight; 3651170065.0004.
CEI LAB CODE: A17-13298

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on September 19, 2017. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP® TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

AMEC Foster Wheeler

CLIENT PROJECT: Wynn Construction Oversight; 3651170065.0004.

CEI LAB CODE: A17-13298

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 09/20/17

TOTAL SAMPLES ANALYZED: 11

SAMPLES >1% ASBESTOS: 2

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Wynn Construction Oversight; 3651170065.0004.

CEI LAB CODE: A17-13298

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
Barge 1-A	Layer 1	A2499450	Black,Gray	Roofing Material (asphalt)	None Detected
	Layer 2	A2499450	Black,Brown	Roofing Material (felt)	None Detected
Barge 1-B		A2499451	Black,Brown	Roofing Material	None Detected
Barge 2	Layer 1	A2499452	Black,Gray	Roofing Material (asphalt Type 1)	None Detected
	Layer 2	A2499452	Black	Roofing Material (tar)	Chrysotile 5%
	Layer 3	A2499452	Black,Brown	Roofing Material (asphalt Type 2)	None Detected
Barge 3-A		A2499453	Gray,Off-white	Window Glazing	None Detected
Barge 3-B		A2499454	Gray,Off-white	Window Glazing	Chrysotile 3%
Barge 4		A2499455	Gray	Electrical Panel Insulation	None Detected
Barge 5		A2499456	Gray,Off-white	Insulation	None Detected
Barge 6		A2499457	Brown,Black	Conduit Insulation	None Detected
Barge 7		A2499458	Brown	Pipe Insulation	None Detected
Barge 8		A2499459	Black	Flange Gasket	None Detected
Barge 9		A2499460	Black,Gray	Belt	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

CEI Lab Code: A17-13298
Date Received: 09-19-17
Date Analyzed: 09-20-17
Date Reported: 09-20-17

Project: Wynn Construction Oversight; 3651170065.0004.

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Barge 1-A Layer 1 A2499450	Roofing Material (asphalt)	Heterogeneous Black,Gray Fibrous Bound	30% 	Cellulose	25% 40% 5% 	Tar Gravel Mica 	None Detected
Layer 2 A2499450	Roofing Material (felt)	Heterogeneous Black,Brown Fibrous Bound	35% 	Cellulose	55% 10% 	Tar Binder 	None Detected
Barge 1-B A2499451	Roofing Material	Heterogeneous Black,Brown Fibrous Bound	55% 	Cellulose	35% 10% 	Tar Binder 	None Detected
Barge 2 Layer 1 A2499452	Roofing Material (asphalt Type 1)	Heterogeneous Black,Gray Fibrous Bound	30% 	Cellulose	25% 40% 5% 	Tar Gravel Mica 	None Detected
Layer 2 A2499452	Roofing Material (tar)	Heterogeneous Black Fibrous Bound	10% 	Cellulose	75% 10% 	Tar Binder 	**5% Chrysotile**
Layer 3 A2499452	Roofing Material (asphalt Type 2)	Heterogeneous Black,Brown Fibrous Bound	30% 	Cellulose	25% 40% 5% 	Tar Gravel Mica 	None Detected
Barge 3-A A2499453	Window Glazing	Heterogeneous Gray,Off-white Fibrous Bound	<1% 5% 	Cellulose Wollastonite	80% 5% 10% 	Caulk Binder Paint 	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

CEI Lab Code: A17-13298
Date Received: 09-19-17
Date Analyzed: 09-20-17
Date Reported: 09-20-17

Project: Wynn Construction Oversight; 3651170065.0004.

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Barge 3-B A2499454	Window Glazing	Heterogeneous Gray,Off-white Fibrous Bound	<1% 2%	Cellulose Talc	80% 5% 10%	Caulk Binder Paint	**3% Chrysotile**
Barge 4 A2499455	Electrical Panel Insulation	Heterogeneous Gray Fibrous Loosely Bound	85%	Fiberglass	15%	Binder	None Detected
Barge 5 A2499456	Insulation	Heterogeneous Gray,Off-white Fibrous Bound	35%	Fiberglass	55% 10%	Vinyl Binder	None Detected
Barge 6 A2499457	Conduit Insulation	Heterogeneous Brown,Black Fibrous Bound	60%	Fiberglass	30% 10%	Tar Binder	None Detected
Barge 7 A2499458	Pipe Insulation	Heterogeneous Brown Fibrous Loosely Bound	75%	Cellulose	25%	Binder	None Detected
Barge 8 A2499459	Flange Gasket	Heterogeneous Black Non-fibrous Tightly Bound			90% 10%	Rubber Binder	None Detected
Barge 9 A2499460	Belt	Heterogeneous Black,Gray Fibrous Tightly Bound	30%	Synthetic Fiber	60% 10%	Rubber Binder	None Detected

LEGEND:	Non-Anth	= Non-Asbestiform Anthophyllite
	Non-Trem	= Non-Asbestiform Tremolite
	Calc Carb	= Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by CEI Labs, Inc. CEI Labs makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

ANALYST: Scott Minyard

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS CHAIN OF CUSTODY

(11) A7-13.298
A2499450
A2499460

CEI LABS
730 SE Maynard Road, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:
CEI Lab Code:
CEI Lab I.D. Range:

COMPANY INFORMATION	PROJECT INFORMATION
CEI CLIENT #:	Job Contact: Matt Grove
Company: Amec Foster Wheeler	Email / Tel: 978-392-5398
Address: 271 Mill Rd.	Project Name: Wynn Construction Oversight
Chelmsford, MA 01824	Project ID#: 3651170065.0004.xxxx
Email: matt.grove@amecfw.com	PO #: Use Project ID #
Tel: 978-392-5398 Fax:	STATE SAMPLES COLLECTED IN: MA

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	24 HR	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☐	☒	☐	☐	☐
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PLM BULK	CARB 435		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM AIR	ISO 10312	☐	☐	☐	☐	☐	☐
TEM AIR	ASTM 6281-09	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☐
TEM DUST WIPE	ASTM D6480-05 (2010)	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09 (2014)	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-13			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS / SPECIAL INSTRUCTIONS:
Sampler: Mark Maggione

☒ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/18/17 13:30	[signature]	9/19/17 9:20

Samples will be disposed of 30 days after analysis

AM-1J. 298

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Amec Foster Wheeler	Job Contact: Matt Grove
Project Name: Wynn Construction Oversight	
Project ID #: 36511700 65.004.xxxx	Tel: 978-392-5398

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
Barge 1-A	Black Roofing material / on barge outside structures	Debris pile	PLM [X]	TEM [ ]
Barge 1-B	Black Misc Roofing material / Inbetween structures	Debris pile	PLM [X]	TEM [ ]
Barge 2	Black Tar/Roofing material / Inbetween structures	Debris pile	PLM [X]	TEM [ ]
Barge 3-A	white window glasing / window 1	wooden structure	PLM [X]	TEM [ ]
Barge 3-B	white window glasing / window 2	wooden structure	PLM [X]	TEM [ ]
Barge 4	Insulation Electrical Panel / Inside wooden structure	wooden structure	PLM [X]	TEM [ ]
Barge 5	Insulation inside metal structure	metal structure	PLM [X]	TEM [ ]
Barge 6	Insulation inside conduit / Between structures	Debris pile	PLM [X]	TEM [ ]
Barge 7	Insulation inside piping	Debris pile	PLM [X]	TEM [ ]
Barge 8	Flange gasket inside metal structure	Debris pile	PLM [X]	TEM [ ]
Barge 9	Belt inside metal structure	Debris pile	PLM [X]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]
			PLM [ ]	TEM [ ]

Massachusetts Department of Environmental Protection

BWP AQ 04 (ANF-001) PreForm

Asbestos Notification Form

☑ This is a revision to an existing form.
Project ID for existing form to be revised: 100273218

☐ This job is being conducted under a Blanket Permit.
MassDEP assigned Blanket Authorization ID: _____

☐ This job is being conducted under a Non Traditional Abatement Work Practice Permit.
MassDEP assigned Non Traditional Work Practice Authorization ID: _____

☐ This job does not require the use of an asbestos contractor licensed by the MA Department of Labor Standards because (please check one box below):

- ☐ This job involves breaking, shearing or slicing of non-friable asbestos-containing material only (e.g. cement shingles/panels, cement pipe, asphalt roofing or siding, vinyl floor tiles, etc.) in a manner that does not generate asbestos dust or render the material friable, as allowed by the Department of Labor Standards (DLS) at 453 CMR 6.13(2)(a)5. All work must be done in compliance with the applicable regulations at 310 CMR 7.15; or

- ☐ This job involves work on asbestos containing material that is classified by the Department of Labor Standards (DLS) as a 'Small-Scale Asbestos Project,' an 'Asbestos-Associated Project', or an 'Asbestos Response Action' by qualified 'in-house' personnel as allowed by the Department of Labor Standards (DLS) at 453 CMR 6.00, and will be performed in accordance with all the requirements of 453 CMR 6.13 (1)(a), 453 CMR 6.13 (2)(a)1. and 3., and 453 CMR 6.14 (1)(a), as applicable. All work must be done in compliance with the applicable regulations at 310 CMR 7.15.

☐ None of the above conditions apply, generate a new form.

Massachusetts Department of Environmental Protection

BWP AQ 04 (ANF-001)

Project Revision Notification

100273218R1

Asbestos Project #

☑ Project Revision

☐ Project Cancellation

A. Asbestos Abatement Description

Instructions 1. All sections of this form must be completed in order to comply with MassDEP notification requirements of 310 CMR 7.15 and Department of Labor Standards (DLS) notification requirements of 453 CMR 6.12

1. Facility Location:

WYNN BOSTON HARBOR	BOSTON HARBOR
a. Name of Facility	b. Street Address
EVERETT / MA	02149 / 8577707854
c. City/Town / d. State	e. Zip Code / f. Telephone
HELMUT ERNST	PROJECT MANAGE
g. Facility Contact Person Name	h. Facility Contact Person Title

Worksite Location: BARGE

i. Building Name, Wing, Floor, Room, etc.

2. Blanket Permit Project Approval, if applicable:

Approval ID #

3. Non-Traditional Asbestos Abatement Work Practice Approval, if applicable:

Approval ID #

MassDEP Use Only

Date Received

9/28/2017	10/5/2017
a. Project Start Date (MM/DD/YYYY)	b. End Date (MM/DD/YYYY)
7AM-3:30PM	N/A
c. Work Hours - Monday Through Friday	d. Work Hours - Saturday & Sunday

2. Submit Original Form To:
Commonwealth of Massachusetts
P.O. Box 4062
Boston, MA 02211

B. Other Project Revisions:

A.8.A LBT SOLUTIONS, LLC
A.8.B. AM900522
A.12 OTHER: REGULATE AREA
A.13 OUTDOORS
A.15 TWO STAGE DECON

Note: Temporary storage of Asbestos containing waste material is only allowed at the place of business of a DLS licensed Asbestos contractor or a transfer station that is permitted by MassDEP and operated in compliance with Solid Waste Regulations 310 CMR 19.000

Massachusetts Department of Environmental Protection

BWP AQ 04 (ANF-001)

Project Revision Notification

100273218R1

Asbestos Project #

☑ Project Revision

☐ Project Cancellation

C. Certification

Note: Contractor must sign this form for DLS notification purposes

"I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment. The undersigned hereby states that I have read the Commonwealth of Massachusetts regulations governing asbestos abatement (453 CMR 6.00 promulgated by the Department of Labor Standards and 310 CMR 7.15 promulgated by the Department of Environmental Protection), and that I am aware that this permit application or notification shall not be deemed valid unless payment of the applicable fee is made."

VANESSA DEL VALLE	VANESSA DEL VALLE
1. Name	2. Authorized Signature
PROJECT COORDINATOR	9/28/2017
3. Position/Title	4. Date (MM/DD/YYYY)
4019437100	J.R. VINAGRO CORPORATION
5. Telephone	6. Representing
2208 PLAINFIELD PIKE	JOHNSTON
7. Address	8. City/Town
RI	02919
9. State	10. Zip Code

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

DAILY SITE LOG

Date: 9/28/17	Project #: J170204
Client: Amec Foster Wheeler	Site Location: 1 Horizon Way, Everett, MA
Work Area(s): Barge - Wooden Structure	Shift Times: 0700 - 1530
Project Monitor: Mark Jacobs (MJ)	Certification #: AM900522
Contractor: J.R Vinagro Corp. (JVC)	Supervisor: Julio Pantaleon (JP)

TIME	SITE NOTES / COMMENTS
0630	MJ arrives onsite and JVC is already onsite.
0636	MJ speaks with Greg Bashaw (GB) of SPS about loading equipment onto the boat and the times the boat will be picking up us off the barge later in the day. JVC and MJ are loading equipment on the boats and recieving life jackets that must be wore all day.
0658	SPS informs everyone the boats are ready to leave for the barge.
0713	We arrive at barge and unload equipment. MJ and JP walk the work area and discuss the work plan. MJ tells Dennis Quereux (DQ) the project manager for JVR that they need to change the notification and amend it to say "regulated area" instead of "Full containment" and that LBP is the project monitoring company onsite. Also change "3 stage decon" to "2 stage decon".
0726	JVC begins to set up regulated area around the wooden structure and small debris field around structure.

*MJ Checks all of the JVC workers paperwork and it is all up to date and they have a hard Copy of the notification onsite.

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacobs

Daily Site Log, Continued

TIME	SITE NOTES / COMMENTS
0742	MJ calibrates 2 HV pumps at 5.42 LPM.
0750	JVC has completed setting up the regulated area and
	put on the Proper PPE to begin the clean up of the small
	debris field that has ACM roofing material throughout, they are
	utilizing hand tools and shovels to put debris into 2 6mil
	asbestos waste bags. They have adequate water is use
	from sub pump placed off the side of the bags in the water
	to reduce visible emmisons during the abatement activities.
0904	JVC continuing to bag up debris within the regulated area
	around the wooden structure. All workers are wearing Proper
	PPE and adequate amount of water during removal.
0911	DQ informs MJ the corrections have been made to the
	notification and it has been emailed to MJ. MJ forwards
	the amended notification to Matt Grove (MG) of Amec Foster
	Wheeler (AFW).
1045	JVC has finished cleaning up the debris field around
	the wooden structure and has started cleaning up the debris
	inside the wooden structure. 2 workers have got on ladders to
	start removing the roofing material that is ACM in whole Component
	utilizing hand tools.
1130	JVC takes a break for lunch.
1147	MJ post-calibrates 2 HV pumps at 5.42 LPM. MJ calibrates
	2 HV pumps at 5.42 LPM.
1150	JVC is back from lunch. The crew is continuing to remove the

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Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacob

Daily Site Log, Continued

TIME	SITE NOTES / COMMENTS
	debris from the inside of the wooden structure and 2 workers
	are removing roof material off of ladders in whole Componet
	while wearing fall protection and all workers are wearing the
	Proper PPE and continuing to use Water.
1231	JVC has finished cleaning the debris within the Wooden
	Structure. 2 workers still removing the roofing material and
	the rest of the crew is removing the windows with the
	Asbestos containing window glazing and placing them into 2
	6mil asbestos waste bags (Removed in whole Component).
1305	The crew fininshed removing the windows and they have started
	to loadout the ACWM in the asbestos waste bags out of
	the regulated area to the poly'd area in the Metal structure
	on the barge.
1328	MJ speaks with DQ and JP about the asbestos survey
	and MJ tells them that he found a fire door that was never
	tested for asbestos that is a Suspect ACM. Instead of
	taking the time sample and have the door tested DQ, JP and
	MJ all agree that JVC will remove it as PACM.
1346	JVC has finished removing the roofing material from the
	roof in whole componet and are final cleaning the regulated
	area and continuing to loadout the asbestos waste bags.
1415	JP informs MJ that the regulated area is ready for
	the Final Visual Clearance. MJ passes the regulated area
	with no visible debris.

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Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jack

Daily Site Log, Continued

TIME	SITE NOTES / COMMENTS
1421	JVC crew wraps the fire door into a sealed bundle with
	2 layers of 6mil poly and have finished all of the
	load out of ACWM to the metal structure. SPS has
	been called to pick up us from the barge.
1423	MJ post-calibrates 2 HV pumps at 5.42 LPM.
1502	SPS arrives to pick up us from barge. MJ speaks with
	DQ and JP, the ACWM will be picked up tomorrow 9/29 in
	the morning.
1530	MJ leaves worksite and reads PCM Samples at LBP office.

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Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jan

LEAD BASED PAINT - ASBESTOS - MOLD
LBP SOLUTIONS

Date: 9/28/17

Project: Wynn Casino - J170204 **Contractor:** J.R. Vinagro Corp.

Site Address: 1 Horizon Way, Everett, MA

Work Area: Barge - Wooden Structure

Asbestos Abatement Activities:
Crew utilized hand tools to remove roofing material and window glazing in whole component

Visual Inspection Checklist:

- ☒ All non-essential equipment removed from the work area.
- ☒ All asbestos containing waste material removed from the work area
- ☒ Asbestos waste containers/bags properly sealed and labeled
- ☐ Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- ☒ Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris
- ☒ Decontamination unit thoroughly cleaned and free and clear of all visible debris
- ☒ Interior polyethylene walls free and clear of all visible debris N/A
- ☒ Interior polyethylene floors free and clear of all visible debris

Abated surfaces: (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other windows

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Julio Pantaleon

Disclaimer: The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

LEAD BASED PAINT - ASBESTOS - MOLD
LBP SOLUTIONS

Asbestos Air Sampling
Chain of Custody

PCM NIOSH 7400 Method (Issue 2: Dated 8/15/1994)

MA - AA000238 RI - AAL130

LBP Solutions, LLC
13 Bird St, Suite 6
Foxboro, MA 02035
844-527-5323

Client Name: Amec Foster Wheeler	Project #: J170204	Pass HSE Test Slide: yes
Project Location: 1 Horizon Way, Everett, MA	Microscope #: Nikon Alphaphot - YS2	Graticule Field Area: .00785
Collection Date: 9/28/17	Rotometer #: HF-03 Date Calibrated: 9/27/17	Phase Rings Aligned: yes

Sample ID#	Location / Worker / Task	Sample Type	Flow Rate Start	Flow Rate End	Flow Rate Ave	Time (24 hour) On	Time (24 hour) Off	Total Time	Total Volume	Fibers/ Fields	Fibers/ mm²	Fibers/ CC
01	Blank	10								Ø/100	Ø	Ø
02	Blank	10								Ø/100	Ø	Ø
03	Outside Decon, West of Regulated Area	1	5.42	5.42	5.42	0742	1147	245	1,327	12/100	15.2866	.0044
04	South of Regulated Area	1	5.42	5.42	5.42	0743	1148	245	1,327	4.5/100	5.732	.0016
05	Outside Decon, West of Regulated Area	1	5.42	5.42	5.42	1147	1423	156	845	5/100	6.3694	.0029
06	South of Regulated Area	1	5.42	5.42	5.42	1148	1424	156	845	1/100	1.2738	.0005

Sampled By:	Transported By:	Received By:	Prepared By:	Analyzed By:
Name: Mark Jacobs	Name:	Name:	Name:	Name:
Signature: Mark Jacobs	Signature:	Signature:	Signature:	Signature:
Date: 9/28/17	Date:	Date:	Date:	Date:

Sample Type: 1.) Background 2.) Pre-Abatement 3.) Asbestos Abatement 4.) Final Cleaning 5.) Glove Bags 6.) Personals 7.) Final Air Clearance 8.) Waste Load Out 9.) Other Work 10.) Blank

Comments:

LEAD BASED PAINT - ASBESTOS - MOLD
LBP SOLUTIONS

DAILY SITE LOG

Date: 9/29/17	Project #: J170204
Client: Amec Foster Wheeler	Site Location: 1 Horizon Way, Everett, MA
Work Area(s): Barge	Shift Times: 0700 – 1500
Project Monitor: Mark Jacobs (MJ)	Certification #: AM900522
Contractor: J.R. Vinagro Corp. (JVC)	Supervisor: Julio Pantaleon (JP)

TIME	SITE NOTES / COMMENTS
0645	MJ arrives onsite. JVC is already onsite and are ready to go to the barge to pick up the equipment and load the ACWM bags onto SPS's boat to bring back to the dock. JVC will put down poly in boat to transport ACWM bag.
0651	SPS and JVC leave dock for the barge.
0702	MJ speaks with Dennis Quereux (DQ) and Frank Riccio (FR) of JVC, both are Project Managers, they inform MJ that the asbestos waste dumpster should be arriving approximately around 0700.
0756	SPS and JVC arrive back at the dock. JVC starts to unload all of their equipment from the boat into the work truck.
0805	JP lays out 2 layers 6mil poly on the ground and the JVC crew starts to unload the ACWM bags off of the boat onto the poly.
0832	MJ speaks with JP and there is only one more boat load of ACWM bag remaining on the barge. SPS takes JVC

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacobs

Daily Site Log, Continued

TIME	SITE NOTES / COMMENTS
	out to the barge for the final trip.
0900	SPS and JVC arrive back at the dock from the barge and begin unloading the ACWM bag onto the poly.
0906	MJ speaks with FR to find out when the dumpster will be arriving onsite and he is unsure because the truck is running late.
0933	The truck arrives onsite from Red Tech and drops the dumpster on the water side of the SPS trailer. MJ speaks with FR about the waste manifest and he tells MJ it will be left with SPS for a Wynn Rep to sign.
0938	JVC begins to line the dumpster with 2 layers of 6mil poly on the walls and floor. MJ speaks with FR and JP to make sure we all count the number of bags for an accurate count.
0945	JVC starts loading dumpster with ACWM bags and JP, MJ and FR are keeping count.
1001	JP puts asbestos signs and the proper transportation placards on the dumpster.
1025	JVC finishes loading dumpster and seals it. The total count was 125 bag and 1 Bundle.
1029	MJ and FR take waste manifest to SPS trailer and speak with Devon Wilton of SPS, who will be holding

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: [signature]

Daily Site Log, Continued

TIME	SITE NOTES / COMMENTS
	on to the waste manifest to be signed by Wynn Rep.
	Devon Wilton said he would inform MJ and FR when
	the waste manifest is signed.
1115	MJ leaves worksite to LBP office to compile paperwork
	and write clearance letter.
1511	Devon Wilton tells MJ that the waste manifest
	has been signed and that the asbestos waste
	dumpster will be picked up on Tuesday 10/3.

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: [signature]

September 29, 2017

Mr. Matt Grove
Senior Project Manager
Amec Foster Wheeler Environment & Infrastructure, Inc.
271 Mill Road
Chelmsford, MA 01824

Final Visual Inspection

Barge - Roofing Material and Window Glazing
1 Horizon Way
Everett, MA 02149

Dear Mr. Matt Grove,

On September 28 and 29, 2017, LBP Solutions, LLC (LBP) performed a visual inspection to determine the completion of asbestos removal activities. Removal activities involved the removal of asbestos containing roofing material and window glazing from the wooden structure on the barge. J. R. Vinagro Corporation Massachusetts Department of Labor Standards License # AC000837 conducted the abatement utilizing hand tools to remove the roofing material and the window glazing by whole component. Upon visual inspection of the work area, no evidence of visible debris was observed. Mr. Mark Jacobs of LBP, Massachusetts Department of Labor Standards License # AM900522, performed the visual inspection.

A copy of the visual inspection log is also attached.

LBP would like to thank you for the opportunity to have serviced Mr. Matt Grove's environmental testing needs. If you have any questions regarding the completed testing, please don't hesitate to call.

Sincerely,

Mark Jacobs

Mark Jacobs
Project Manager

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

Date: 9/28/17

Project: Wynn Casino - J170204 **Contractor:** J.R. Vinagro Corp.

Site Address: 1 Horizon Way, Everett, MA

Work Area: Barge - Wooden Structure

Asbestos Abatement Activities: Crew utilized hand tools to remove roofing material and window glazing in whole compound

Visual Inspection Checklist:

- [x] All non-essential equipment removed from the work area. _____
- [x] All asbestos containing waste material removed from the work area _____
- [x] Asbestos waste containers/bags properly sealed and labeled _____
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [x] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris _____
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris _____
- [x] Interior polyethylene walls free and clear of all visible debris N/A
- [x] Interior polyethylene floors free and clear of all visible debris _____

Abated surfaces: (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors (Roof) Siding Sink (Other) windows

Are the abated surfaces free and clear of all visible debris? Yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Julio Pantaleon

Disclaimer: The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

William D. McKinney,
Director

Asbestos Project Monitor

MARK J. JACOBS

Eff. Date 11/07/16
Exp. Date 11/07/17
AM900522
Member of C.O.N.E.S.
BOSR BOS-RENEW

17

This is to certify that

Mark J. Jacobs

has completed the requisite training, and has passed an examination for reaccreditation

Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

LBP Solutions
13 Bird Street Suite 6 Foxboro, MA 02035

July 3, 2017
Course Dates

17-0971-174-261380
Certificate Number

July 03, 2017
Examination Date

July 03, 2018
Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887 Telephone 978.658.5272 www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION

Certificate No: **A046634**

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT

DEPARTMENT OF LABOR STANDARDS

19 STANIFORD STREET, BOSTON, MASSACHUSETTS 02114

CERTIFICATION FOR ASBESTOS ANALYTICAL SERVICES

LBP SOLUTIONS, LLC
13 BIRD STREET
SUITE 6
FOXBORO MA 02035

LICENSE: **AA000238** EXPIRES: **Friday, August 24, 2018**

IN ACCORDANCE WITH MGL CH. 149 § 6B AND 453 CMR 6.08 THIS CERTIFICATE IS ISSUED BY THE DEPARTMENT OF LABOR STANDARDS TO THE ABOVE NAMED ENTITIY TO PROVIDE THE ASBESTOS ANALYTICAL SERVICES SPECIFICALLY LISTED BELOW.

CLASS C CERTIFICATE

William D. McKinney

WILLIAM D. MCKINNEY, DIRECTOR

Mailing Address:

LBP SOLUTIONS, LLC
13 BIRD STREET
SUITE 6
FOXBORO, MA 02035

Massachusetts Asbestos Waste Shipment Record

100273218
MassDEP Asbestos Notification Number

№ 1664

GENERATOR

Work Site
WYNN BOSTON HARBOR EVERETT MA 02149
Name & Address of Facility or Work Site

WYNN Design + Development — 857-770-7854
Owner/Operator (Generator) Name — Telephone Number

Asbestos Abatement Project
J.R VIVAGRO CORP 2208 PLAINFIELD PIKE JOHNSTON, RI, 02919
Name & Address of Asbestos Contractor

AC000837 — Frank Riccio — 401-255-7292
Department of Labor Standards (DLS) License Number — Contact Person Name (If Different From Above) — Telephone Number

Asbestos-Containing Waste Material (ACWM) - Specify Type & Amount Generated
☐ Friable _____ Quantity in Cubic Meters (Cubic Yards)
☒ Non-Friable 10 yrds Quantity in Cubic Meters (Cubic Yards)

Containers Used for Shipment of ACWM - Specify Type & Number Used
☐ Drums/Barrels _____ Number
☒ 6-Mil Plastic Bags/Wrap 125 Number
☒ Other: BAGS / 1 Bundle Specify Number

Work Site Owner/Operator Certification: "I hereby certify that the contents of this shipment are fully and accurately described above and that they have been characterized, packaged, marked and labeled in accordance with 310 CMR 7.15."
9-29-17 Certification Date (MM/DD/YYYY)

Frank Riccio — Signature
Frank Riccio — Print Name
SUPEVISOR — Title
CHRIS GORDON — CHRIS GORDON — PRES, WYNN DEV.

TRANSPORTER 1

R.E.D Technologies LLC 10 North Woods Drive Bloomfield CT 06002
Name & Address of Company or Person Transporting ACWM

_____ — 860-218-2428 — _____
Contact Person Name (If Different From Above) — Telephone Number — Date ACWM Was Picked Up (MM/DD/YYYY)

Transporter # 1 Certification: "I hereby certify that the contents of this shipment are in all respects in the proper condition for transport according to applicable international, federal, state and local regulations."
_____ Certification Date (MM/DD/YYYY)

_____ Signature — _____ Print Name — _____ Title

TRANSPORTER 2

_____
Name & Address of Company or Person Transporting ACWM

_____ — _____ — _____
Contact Person Name (If Different From Above) — Telephone Number — Date ACWM Was Picked Up (MM/DD/YYYY)

Transporter # 1 Certification: "I hereby certify that the contents of this shipment are in all respects in the proper condition for transport according to applicable international, federal, state and local regulations."
_____ Certification Date (MM/DD/YYYY)

_____ Signature — _____ Print Name — _____ Title

DISPOSAL SITE

Minerva Enterprises, 8955 Minerva Road SE
Name & Address of Company or Person Operating Disposal Site

Waynesburg — OH — 44688
City/Town — State — ZIP Code

_____ — 330-866-3435 — _____
Contact Person Name (If Different From Above) — Telephone Number — Date Shipment Was Received (MM/DD/YYYY)

Indicate Any Discrepancies

Disposal Facility Certification: "I hereby certify that (1) the quantity of ACWM listed on this asbestos waste shipment record is the same as the quantity accepted for disposal and (2) this facility holds the appropriate permits and/or authorizations to accept for disposal the ACWM described."

_____ Signature — _____ Print Name — _____ Title

WHITE SIGNATURE PAGE MUST STAY ATTACHED! Until Delivery to Receiving Facility (White, Yellow, Pink, Gold)
White – Generator; **Yellow** – WDS; **Pink** – Transporter; **Gold** – Transporter 2; **Blue** – Contractor; **Green** – Remains at Shipment

271 Mill Road, Chelmsford, MA
01824
Tel. (978) 692-9090

DAILY FIELD REPORT (DFR)

					DFR No.		
					Page No	1 of 1	
Time On Site	**08:00**	Time Off Site	**10:00**	Total Hours On Site	**2.0 hrs**	Date	**10/09/2017**
Travel Time	**1.5**	Reason for Travel	**To Inspect for and Collect Suspect ACM (Asbestos Containing Material) on Piping and Stockpiled Timber**			Weather	**Overcast, ShowersTtemps in 70's**
Project Name	**Wynn Construction Oversight**				Project No.	**3651170065**	
AMEC Foster Wheeler On-Site	**Mark Maggiore (08:00-10:00)**				Permit No.		
Other Personal On-Site:	Wynn				Location	**Everett, MA**	

Personnel on Site
Bowen Chen – Wynn

Work Performed
Arrived at 3 Charlton Street, Wynn Main offices, to meet with Bowen Chen (Wynn Rep) to escort me to the poly covered piping that was in question as possible ACM. There were three pieces of piping (covered upon arrival) which were inspected for possible ACM: a long intact pipe, a broken small piece of pipe, and a smaller tubular piece of piping. During inspection of the pipe, I noted a piece of timber that was extruding from the timber stockpile which appeared to have a fibrous coating which could be possible ACM. This prompted me to walk around the perimeter of the timber stockpile to determine if other similar timbers were present. Eighteen samples were collected for possible ACM with three representative samples of each material collected. No samples were taken from the smaller tubular piece of piping or other pieces of piping observed inside of the timber stockpile from the west side of the stockpile.

- Three samples were collected from outer insulation from the long intact pipe. Black insulted, tar material. ID = Black Outer Insulation Pipe- 1A, B, C.
- Three samples were collected inside of the broken small piece of pipe. Black insulted fibrous material. ID = Black Small Inner Pipe – 1A,B,C.
- Three samples were collected from a rubber flange from the broken small piece pipe. Black rubber flange. ID = Black Small Pipe Flange- 1, A, B, C.
- Three samples were collected from the extruding timber from the stockpile. Black insulted fibrous material. ID = Black Insulation Timber- 1A,B,C.
- Three samples were collected from material on the eastern side of the stockpile. Black insulated material. ID =Black Insulation Stockpile -1A, B, C.
- Three samples were collected from material on the northeastern side of the timber stockpile. Black Insulated material. ID = Black Insulation Stockpile- 2A, B, C.

Quality Control/Inspections Performed
Samples were placed in ziplock bags and labeled with date/time, sample ID, and Site location. All samples were placed under a chain of custody and delivered to ProScience Analytical Services in Woburn, MA at 12:37 in the afternoon with a less than 6 hour turnaround time (by 5 pm) with verbal confirmation of results.

AMEC Foster wheeler Onsite: Mark Maggiore Date:10-09-17	Signature:	Applicable Specifications N/A	Rev.
Reviewed By : Matt Grove Date: 10-19-17	Signature	**Applicable Drawing No.** N/A	Rev.

PHOTO 1:
View of a long intact pipe, a small piece of broken pipe, and smaller tubular piece of pipe which were suspected to have asbestos-containing material on them. Stockpile of timbers from barge demo in the background.

Possible ACM observed on adjacent timber (red circle). Sample ID = Black Insulation Timber -1A, B, C

PHOTO 2:
View of exposed piping inside stockpile on west side of the stockpile. Photo taken looking northeast.

PHOTO 3:
View of timber stockpile looking west.

PHOTO 4:
View of possible ACM (circled in red) inside stockpile on eastern side of stockpile. Sample ID = Black Insulation Stockpile - 1A, B, C.
[Image Wynn Construction_100917 (12). View of Possible ACM collected inside Stockpile on Eastern Side of Stockpile.}

PHOTO 5:
Close up view of material identified as "Black Insulation Stockpile – 1".

PHOTO 6:
View of possible ACM (circled in red) observed on the northeast portion of timber stockpile. Sample ID Black Insulation Stockpile-2A, B, C.

PHOTO 7:
View of smaller broken pipe looking west**.**

PHOTO 8:
View of inner insulation inside smaller broken pipe. Sample ID = Black Small Inner Pipe – 1A,B,C.

PHOTO 9:
Close-up view of black insulation inside smaller broken pipe. Sample ID = Black Small Inner Pipe-1A.

PHOTO 10:
View of suspect ACM insulation on timber in stockpile adjacent to pipe.

PHOTO 11:
Close-up view of suspect ACM insulation. Sample ID =Black Insulation Timber – 1.

PHOTO 12:
View of long intact pipe. Possible ACM samples collected from outer insulation. Sample ID = Black Outer Insulation Pipe-1A, B, C.

PHOTO 13:
View of rubber flange inside small broken pipe which was suspect ACM. Sample ID = Black Small Pipe Flange- 1, A, B, C.

PHOTO 14:
View of smaller tubular pipe. No suspect ACM identified or sampled.

ProScience Analytical Services, Inc

Matt Grove
AMEC Foster Wheeler Environment &
Infrastructure, Inc.
271 Mill Rd.
Chelmsford, MA 01824

October 09, 2017

Dear Matt Grove,

The enclosed analytical results have been obtained by using EPA 600/R-93/116 or EPA 600/M4-82-020. Calibrated Visual Estimate (CVE) is used by ProScience for the determination of the percentage of asbestos and other components in the sample. Point Counting is recommended when the sample contains less than 10% asbestos by CVE. Friable materials found to be less than 1% by CVE are automatically point counted (400 points) at no additional charge. ProScience recommends further analysis by a gravimetric method for non-friable materials that are less than 1% by CVE.

The Quality Control data related to the samples analyzed is available upon client's written request. ProScience Analytical Services Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested.

If you have any questions please contact the Laboratory Manager or the Laboratory Director.

Sincerely,

Patricia Weakley

Patricia Weakley, Optical Asbestos Manager

Aimee Cormier, Laboratory Director

Enclosure: Version 2
LAB BATCH ID: B 106854 CLIENT PROJECT ID: 3651170065.004.XXXY
Client Ref: Wynn Construction
CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; ME ID# LA-056; NVLAP Lab Code 200090-0; RI ID # AAL-093; VT ID# AL016876

22 Cummings Park • Woburn, Massachusetts • 01801 • Phone (781)935-3212 • Fax (781)932-4857

ProScience Analytical Services, Inc.

Client Name: AMEC Foster Wheeler Environment & Infrastructure, Inc.
PO #: Bill to PN
Client Project #: 3651170065.004.xxxy
Client Reference: Wynn Construction
Method: EPA/600/R-93/116

Batch: **B106854**
Date Sampled: 10/9/2017
Date Received: 10/9/2017
Date Analyzed: 10/9/2017
Date of Report: 10/9/2017

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Small Inner Pipe-1A	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Small Inner Pipe Insulation
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Small Inner Pipe-1B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Small Inner Pipe Insulation
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Small Inner Pipe-1C	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Small Inner Pipe Insulation
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Insulation Timber-1A	Black	0	0	0	0	0	0	0	0	40	0	0	0	60

Description: Black Insulation on Timber in Stockpile
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Insulation Timber-1B	Black	0	0	0	0	0	0	0	0	40	0	0	0	60

Description: Black Insulation on Timber in Stockpile
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Insulation Timber-1C	Black	0	0	0	0	0	0	0	0	40	0	0	0	60

Description: Black Insulation on Timber in Stockpile
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: AMEC Foster Wheeler Environment & Infrastructure, Inc.
PO #: Bill to PN
Client Project #: 3651170065.004.xxxy
Client Reference: Wynn Construction
Method: EPA/600/R-93/116

Batch: **B106854**
Date Sampled: 10/9/2017
Date Received: 10/9/2017
Date Analyzed: 10/9/2017
Date of Report: 10/9/2017

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Outer Insulation Pipe-1A	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Long Pipe, Outer Insulation Black
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Outer Insulation Pipe-1B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Long Pipe, Outer Insulation Black
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Outer Insulation Pipe-1C	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Long Pipe, Outer Insulation Black
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Small Pipe Flange-1A	Black	0	0	0	0	0	0	0	0	10	0	0	0	90

Description: Flange, Smaller Pipe
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Small Pipe Flange-1B	Black	0	0	0	0	0	0	0	0	10	0	0	0	90

Description: Flange, Smaller Pipe
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Small Pipe Flange-1C	Black	0	0	0	0	0	0	0	0	10	0	0	0	90

Description: Flange, Smaller Pipe
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: AMEC Foster Wheeler Environment & Infrastructure, Inc.
PO #: Bill to PN
Client Project #: 3651170065.004.xxxy
Client Reference: Wynn Construction
Method: EPA/600/R-93/116

Batch: **B106854**
Date Sampled: 10/9/2017
Date Received: 10/9/2017
Date Analyzed: 10/9/2017
Date of Report: 10/9/2017

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Insulation Stockpile-1A	Black	0	0	0	0	0	0	0	0	40	0	0	0	60

Description: East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Insulation Stockpile-1B	Black	0	0	0	0	0	0	0	0	40	0	0	0	60

Description: East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Insulation Stockpile-1C	Black	0	0	0	0	0	0	0	0	40	0	0	0	60

Description: East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Insulation Stockpile-2A	Black	0	0	0	0	0	0	0	0	30	0	0	0	70

Description: North East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Insulation Stockpile-2B	Black	0	0	0	0	0	0	0	0	30	0	0	0	70

Description: North East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
Black Insulation Stockpile-2C	Black	0	0	0	0	0	0	0	0	30	0	0	0	70

Description: North East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite
Non-Asbestos Codes: FBG = Fiberglass MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch #and the Sample ID (example: [Batch #] - [Sample ID]).

* All results are in percentage.

Analyst: Sophetra Ken

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours / 6 Hours / Same Day / Next Day / 2 Days / 3 Days / 5 Days / Other _____
TAT in bus. days - lab approval required for rush analysis

PASI Batch # B106854

PLM Chain of Custody

Client: Amec Foster Wheeler
Address: 271 Mill Rd. Chelmsford, MA
Project #: 3651170065.004.xxxy PO: Bill to PN
Project Site: Wynn Construction
Contact: Matt Grove
Tel. / Fax #: 978-392-5398 / 978-265-1458 cell
Email: matt.grove@amecfw.com

Stop on first positive*: Yes / No
*If no selelction is made the lab will analyze all samples
Special Instructions: Call w/verbal
Relinquished By: [signature] Date/Time: 10/9/17 1237
Received By Lab: Margaret Valento Date/Time: 10.9.17 1237
Shaded area for lab use only. Due Date:
# of SamplesReceived: 18 Analyzed:
Results: email fax verbal By: PW H.W. MMV Date: 10/9/17 4:10 pm (428 pm) H.W.
Analyst / Date: [signature] 10/9/17 QC by / Date: [signature] 10/9/17

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI ∥	RI ⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
1 Black small Inner pipe -1A	10/9/17 900	Small Inner pipe Insulation	Ø	BK	N	MT	N																				100
2 Black small Inner pipe -1B	10/9/17 902	Small Inner pipe Insulation	Ø	BK	N	MT	N																				100
3 Black small Inner pipe -1C	10/9/17 904	Small Inner pipe Insulation	Ø	BK	N	MT	N																				100
4 Black Insulation timber -1A	10/9/17 905	Black Insulation on timber in stockpile	Ø	BK	Y	MT	N																W 40				60
5 Black Insulation timber -1B	10/9/17 907	Black Insulation on timber in stockpile	Ø	BK	Y	MT	N																W 40				60
6 Black Insulation timber -1C	10/9/17 908	Black Insulation on timber in stockpile	Ø	BK	Y	MT	N																W 40				60

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 201850, 229027, 235000, 231856 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

ver 4.5 Updated 02/08/17

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA)

ProScience *Analytical Services, Inc.* www.proscience.net

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours, 6 Hours, Same Day, Next Day; 2 Days, 3 Days, 5 Days, Other _____

TAT in bus. days - lab approval required for rush analysis

PASI Batch # B106854

PLM Chain of Custody

Client: Amec Foster Wheeler

Address: 271 Mill Rd. Chelmsford, MA 01824

Project #: 36511700065.004.xxxx PO: Bill to project #

Project Site: Wynn Construction

Contact: Matt Grove

Tel. / Fax #: 978-392-5348

Email: matt.grove@amecfw.com

Stop on first positive*: Yes / No *If no selection is made the lab will analyze all samples

Special Instructions:

Relinquished By: [signature] Date/Time: 10/9/17 1231

Received By Lab: Date/Time:

Shaded area for lab use only. Due Date:

# of Samples Received: Analyzed:

Results: email fax verbal By: Date:

Analyst / Date: [signature] 10/9/17 QC by / Date:

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	∥	⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
7 Black Outer Insulation pipe-1A	10/9/17 910	long pipe, Outer Insulation Black	Ø	BK	Y	M T	N																				100
8 Black Outer Insulation pipe-1B	10/9/17 912	long pipe, outer Insulation Black	Ø	BK	N	M T	N																				100
9 Black Outer Insulation pipe-1C	10/9/17 914	long, pipe, outer Insulation Black	Ø	BK	Y	M T	N																				100
10 Black Small pipe Flange-1A	10/9/17 930	Flange, smaller pipe	Ø	BK	Y	M T	N																W 10				90
11 Black Small pipe Flange-1B	10/9/17 932	Flange, smaller pipe	Ø	BK	Y	M T	N																W 10				90
12 Black Small pipe Flange-1C	10/9/17 934	Flange, Small pipe	Ø	BK	Y	M T	N																W 10				90

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 201850, 229027, 235000, 231856 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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ProScience *Analytical Services, Inc.* www.proscience.net

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days 5 Days Other _____

TAT in bus. days - lab approval required for rush analysis

PASI Batch # B106854

PLM Chain of Custody

Client: Amec Foster Wheeler

Address: 271 Mill Rd. Chelmsford, MA 01824

Project #: 36511700G5.004.XXXV PO: Bill to PN

Project Site: Wynn Construction

Contact: Matt Grove

Tel. / Fax #: 978-392-5398

Email: matt.grove@amecfw.com

Stop on first positive*: Yes / No *If no selection is made the lab will analyze all samples

Special Instructions:

Relinquished By: Date/Time: 10/9/17 1237

Received By Lab: Date/Time:

Shaded area for lab use only. Due Date:

# of SamplesReceived: Analyzed:

Results: email fax verbal By: Date:

Analyst / Date: 10/9/17 QC by / Date:

Def	Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI ∥	RI ⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
				Stereo Scope					Optical Properties					RI		Asbestos Percentage (%)	Circle Type					Non Asbestos Percentage (%)						
13	Black Insulation Stockpile -1A	10/9/17 935	~~Northeast~~ East portion of timber stockpile, Insulation	Ø	BK	Y	M/T	N																W				
																								40				60
14	Black Insulation Stockpile -1B	10/9/17 937	~~Northeast~~ East portion of timber stockpile, Insulation	Ø	BK	Y	M/T	N																W				
																								40				60
15	Black Insulation Stockpile -1C	10/9/17 939	East portion of timber stockpile, Insulation	Ø	BK	Y	M/T	N																W				
																								40				60
16	Black Insulation Stockpile -2A	10/9/17 940	Northeast portion of timber Stockpile, Insulation	Ø	BK	Y	M/T	N																W				
																								30				70
17	Black Insulation Stockpile -2B	10/9/17 942	Northeast portion of timber Stockpile, Insulation	Ø	BK	Y	M/T	N																W				
																								30			70	
18	Black Insulation Stockpile -2C	10/9/17 945	Northeast portion of timber Stockpile, Insulation	Ø	BK	Y	M/T	N																W				
																								30			70	

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 201850, 229027, 235000, 231856 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

ver 4.5 Updated 02/08/17

APPENDIX C

Remediation Waste Documentation

Detail Customer Activity Report

All Ticket Types

October 03, 2017 to October 03, 2017

* - Confirmed Qty Applied to Billing

History and Waiting

Specific Customer(s) : 1284

All Facilities

001284- JR Vinagro

Ticket Date	Facility & Ticket Number	Contract	Truck #	Container	Material	Material Rate	Billing Quantity	Material Total	Tax Total	Total
10/03/2017	I AR 64974	Timbers	Other		Pressure-Treated Wood	F	28.24 TN			

Tickets 1 Items Reported: 1

Customer Totals:

Material Summary	Weight Inbound	Weight Outbound	Volume Inbound	Volume Outbound	Count Inbound	Count Outbound	Billing Quantity	Material Total	Tax Total	Total
PT - Pressure-Treated Wood	28.24	0.00 TN	0.00	0.00 YD	0.00	0.00	28.24 TN			

Detail Customer Activity Report

All Ticket Types

October 04, 2017 to October 04, 2017

* - Confirmed Qty Applied to Billing

History and Waiting

Specific Customer(s) : 1284

All Facilities

001284- JR Vinagro

Ticket Date	Facility & Ticket Number	Contract	Truck #	Container	Material	Material Rate	Billing Quantity	Material Total	Tax Total	Total
10/04/2017	I AR 65117	Timbers	Other		Pressure-Treated Wood	F	18.91 TN			
10/04/2017	I AR 65119	Timbers	Other		Pressure-Treated Wood	F	26.22 TN			
10/04/2017	I AR 65128	Timbers	Other		Pressure-Treated Wood	F	20.16 TN			

Tickets 3 Items Reported: 3

Customer Totals:

Material Summary	Weight Inbound	Weight Outbound	Volume Inbound	Volume Outbound	Count Inbound	Count Outbound	Billing Quantity	Material Total	Tax Total	Total
PT - Pressure-Treated Wood	65.29 TN	0.00	0.00 YI	0.00	0.00	0.00	65.29 TN			

Detail Customer Activity Report

All Ticket Types

October 05, 2017 to October 05, 2017

* - Confirmed Qty Applied to Billing

Current Tickets Only

Specific Customer(s) : 1284

All Facilities

001284- JR Vinagro

Ticket Date	Facility & Ticket Number	Contract	Truck #	Container	Material	Material Rate	Billing Quantity		Material Total	Tax Total	Total
10/05/2017	I AR 65238	Timbers	RB 93		Pressure-Treated Wood		16.99	TN			
10/05/2017	I AR 65247	Timbers	RB 92		Pressure-Treated Wood		15.69	TN			
10/05/2017	I AR 65271	Timbers	Gurrisi 7		Pressure-Treated Wood		15.23	TN			
10/05/2017	I AR 65279	Timbers	Other		Pressure-Treated Wood		17.86	TN			
10/05/2017	I AR 65282	Timbers	Gurrisi Trucking		Pressure-Treated Wood		17.78	TN			
10/05/2017	I AR 65294	Timbers	Gurrisi Trucking		Pressure-Treated Wood		22.17	TN			
10/05/2017	I AR 65311	Timbers	Other		Pressure-Treated Wood		27.12	TN			
10/05/2017	I AR 65312	Timbers	RB 93		Pressure-Treated Wood		23.15	TN			
10/05/2017	I AR 65329	Timbers	Gurrisi 7		Pressure-Treated Wood		18.13	TN			
10/05/2017	I AR 65352	Timbers	RB 92		Pressure-Treated Wood		18.57	TN			
10/05/2017	I AR 65359	Timbers	Gurrisi Trucking		Pressure-Treated Wood		21.88	TN			
10/05/2017	I AR 65367	Timbers	Gurrisi Trucking		Pressure-Treated Wood		23.42	TN			

Tickets 12 Items Reported: 12

Customer Totals:

Material Summary	Weight Inbound	Weight Outbound		Volume Inbound	Volume Outbound		Count Inbound	Count Outbound	Billing Quantity		Material Total	Tax Total	Total
PT - Pressure-Treated Wood	237.99	0.00	TN	0.00	0.00	YD	0.00	0.00	237.99	TN			

Detail Customer Activity Report

All Ticket Types

October 06, 2017 to October 06, 2017

* - Confirmed Qty Applied to Billing

Current Tickets Only

Specific Customer(s) : 1284

All Facilities

001284- JR Vinagro

Ticket Date	Facility & Ticket Number	Contract	Truck #	Container	Material	Material Rate	Billing Quantity		Material Total	Tax Total	Total
10/06/2017	I AR 65387	Timbers	RB 93		Pressure-Treated Wood		20.67	TN			
10/06/2017	I AR 65390	Timbers	Gurrisi Trucking		Pressure-Treated Wood		20.80	TN			
10/06/2017	I AR 65395	Timbers	RB 91		Pressure-Treated Wood		15.71	TN			
10/06/2017	I AR 65409	Timbers	Gurrisi 7		Pressure-Treated Wood		18.09	TN			
10/06/2017	I AR 65424	Timbers	Other		Pressure-Treated Wood		23.39	TN			
10/06/2017	I AR 65434	Timbers	RB 93		Pressure-Treated Wood		21.40	TN			
10/06/2017	I AR 65443	Timbers	Gurrisi Trucking		Pressure-Treated Wood		22.37	TN			
10/06/2017	I AR 65465	Timbers	RB 91		Pressure-Treated Wood		17.98	TN			
10/06/2017	I AR 65483	Timbers	Gurrisi 7		Pressure-Treated Wood		13.68	TN			
10/06/2017	I AR 65492	Timbers	RB 93		Pressure-Treated Wood		14.69	TN			
10/06/2017	I AR 65503	Timbers	Gurrisi Trucking		Pressure-Treated Wood		19.88	TN			
10/06/2017	I AR 65521	Timbers	RB 91		Pressure-Treated Wood		17.67	TN			

Tickets 12 Items Reported: 12

Customer Totals:

Material Summary	Weight Inbound	Weight Outbound		Volume Inbound	Volume Outbound		Count Inbound	Count Outbound	Billing Quantity		Material Total	Tax Total	Total
PT - Pressure-Treated Wood	226.33	0.00	TN	0.00	0.00	YD	0.00	0.00	226.33	TN			

AGGREGATE RECYCLING CORPORATION
Detail Contract Activity Report

All Ticket Types | December 01, 2017 to February 13, 2018

* - Confirmed Qty Applied to Billing

Specific Contract(s) : 'Wynn Casino - Everett'

History and Waiting

All Facilities

Wynn Casino - Everett

Ticket Date	Facility & Ticket Number	Customer	Truck	Material	Billing Quantity		Ordered Quantity	
12/22/2017	I AR 73153	001003 - Charter Contracting Compar	SWS 507	Wood Timbers	9.08	TN	0.00	dedeucted - barge debris
12/27/2017	I AR 73341	001003 - Charter Contracting Compar	SWS 503	Wood Timbers	11.54	TN	0.00	dedeucted - barge debris
12/29/2017	I AR 73555	001003 - Charter Contracting Compar	SWS 507	Wood Timbers	6.86	TN	0.00	
01/02/2018	I AR 73682	001003 - Charter Contracting Compar	SWS 506	Wood Timbers	11.98	TN	0.00	
01/03/2018	I AR 73761	001003 - Charter Contracting Compar	SWS 504	Wood Timbers	5.69	TN	0.00	
01/10/2018	I AR 74243	001003 - Charter Contracting Compar	SWS 507	Wood Timbers	8.00	TN	0.00	
01/15/2018	I AR 74525	001003 - Charter Contracting Compar	SWS 506	Wood Timbers	12.48	TN	0.00	
01/18/2018	I AR 74878	001003 - Charter Contracting Compar	SWS 507	Wood Timbers	11.64	TN	0.00	
01/22/2018	I AR 75091	001003 - Charter Contracting Compar	SWS 506	Wood Timbers	11.57	TN	0.00	
01/29/2018	I AR 75567	001003 - Charter Contracting Compar	SWS 507	Wood Timbers	12.89	TN	0.00	
01/29/2018	I AR 75614	001003 - Charter Contracting Compar	SWS 507	Wood Timbers	8.52	TN	0.00	

Tickets Reported: 11 Items Reported: 11 Contract Totals:

Material Summary	Weight Inbound	Weight Outbound		Volume Inbound	Volume Outbound		Count Inbound	Count Outbound		
WT - Wood Timbers	110.25	0.00	TN	0.00	0.00	YD	0.00	0.00	110.25	TN

507

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL **Timbers**

E. TRANSPORTER INFORMATION **Date of shipment:** 12-22-17

Name of Transporter: Shipyard Waste Solutions Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 12/22 Time: 9:37 Fac. Sig: ARC Revelbe DT / 3X / 10W 9.08

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

SITE	TICKET	WEIGHMASTER
AR	73153	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
9:38 am 12/22/17	10:07 am 12/22/17	SWS 507	Roll Off

REFERENCE	Wynn Casino - Everett
6179-1 SPS New England - 95 Behen St. -	

1003
Charter Contracting Company, LLC
500 Harrison Avenue Suite 404R
Boston, MA 02118

GROSS:	57260 lbs	Scale In	Invoice
TARE:	39100 lbs	Scale Out	Inbound
NET Wt:	18160 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
9.08	**TN**	**Wood Timbers**		
1.00		**State of Maine Fee - $2 per Ton**		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

SIGNATURE:

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

SITE	TICKET	WEIGHMASTER
AR	73341	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
7:57 am 12/27/17	8:24 am 12/27/17	SWS 503	Roll Off

REFERENCE	SWS
6179-1 SPS New England - 95 Behen St. -	

1002
Shipyard Waste Solutions
PO Box 546
Eliot, ME 03903

Charter

GROSS:	60860 lbs	Scale In	Invoice
TARE:	37780 lbs	Scale Out	Inbound
NET Wt:	23080 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
11.54	TN	Wood Pilings		
1.00		State of Maine Fee - $2 per Ton		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

SIGNATURE:

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

SITE	TICKET	WEIGHMASTER
AR	73555	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
1:30 pm 12/29/17	1:40 pm 12/29/17	SWS 507	Roll Off

REFERENCE	SWS
6179-1 SPS New England - 95 Behen St. -	

1002
Shipyard Waste Solutions
PO Box 546
Eliot, ME 03903

Charter

GROSS:	51680 lbs	Scale In	Invoice
TARE:	37960 lbs	Scale Out	Inbound
NET Wt:	13720 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
6.86	**TN**	**Wood Pilings**		
1.00		**State of Maine Fee - $2 per Ton**		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

SIGNATURE:

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL **Timbers**

E. TRANSPORTER INFORMATION **Date of shipment:** 12-29-17

Name of Transporter: Shipyard Waste Solutions Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

				circle one below
Load 1>	Date: 12/29	Time: 1:30	Fac. Sig: ARC	DT / 3X / 10W 686
Load 2>	Date:	Time:	Fac. Sig:	DT / 3X / 10W
Load 3>	Date:	Time:	Fac. Sig:	DT / 3X / 10W
Load 4>	Date:	Time:	Fac. Sig:	DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

SITE	TICKET	WEIGHMASTER
AR	73682	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
3:59 pm 01/02/18	4:11 pm 01/02/18	SWS 506	Roll Off

REFERENCE	Wynn Casino - Everett

1003
Charter Contracting Company, LLC
500 Harrison Avenue Suite 404R
Boston, MA 02118

GROSS:	63520 lbs	Scale In	Invoice
TARE:	39560 lbs	Scale Out	Inbound
NET Wt:	23960 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
11.98	**TN**	**Wood Timbers**		
1.00		**State of Maine Fee - $2 per Ton**		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

SIGNATURE:

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL **Timbers**

E. TRANSPORTER INFORMATION **Date of shipment:** 12/29/17

Name of Transporter: Shipyard waste Truck Name & No: 506

Truck/Tractor Registration: 960327 Trailer Registration: ~~960327~~

circle one below

Load 1> Date: 1/2/18 Time: 3:59 Fac. Sig: ARC [signature] DT / 3X / 10W 11.98

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

SITE	TICKET	WEIGHMASTER
AR	73761	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
12:47 pm 01/03/18	12:59 pm 01/03/18	SWS 504	Roll Off

REFERENCE	Wynn Casino - Everett

1003
Charter Contracting Company, LLC
500 Harrison Avenue Suite 404R
Boston, MA 02118

GROSS:	51400 lbs	Scale In	Invoice
TARE:	40020 lbs	Scale Out	Inbound
NET Wt:	11380 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
5.69	**TN**	**Wood Timbers**		
1.00		**State of Maine Fee - $2 per Ton**		

RC

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

SIGNATURE:

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL **Timbers**

E. TRANSPORTER INFORMATION **Date of shipment:** 1/3/18

Name of Transporter: Shipperd Truck Name & No: 504

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 1/3/18 Time: 11:30 Fac. Sig: ARC Webb DT / 3X / 10W 5.69

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

ARC

SITE	TICKET	WEIGHMASTER
AR	74243	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
2:35 pm 01/10/18	2:36 pm 01/10/18	SWS 507	Roll Off

REFERENCE	Wynn Casino - Everett

1003
Charter Contracting Company, LLC
500 Harrison Avenue Suite 404R
Boston, MA 02118

GROSS:	55560 lbs	Man. Wt. In	Invoice
TARE:	39560 lbs	Man. Wt. Out	Inbound
NET Wt:	16000 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
8.00	**TN**	**Wood Timbers**		
1.00		**State of Maine Fee - $2 per Ton**		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

SIGNATURE:

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL **Timbers**

E. TRANSPORTER INFORMATION **Date of shipment:**

Name of Transporter: Shipyard Waste Solutions Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 1-10-18 Time: 1:04 PM Fac. Sig: ARC Dougherty DT / 3X / 10W 8.00

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

SITE	TICKET	WEIGHMASTER
[illegible]	74525	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
7:47 am 01/15/18	8:49 am 01/15/18	SWS 506	Roll Off
REFERENCE			Wynn Casino - Everett

1003
Charter Contracting Company, LLC
500 Harrison Avenue Suite 404R
Boston, MA 02118

GROSS:	65640 lbs	Scale In	Invoice
TARE:	40680 lbs	Scale Out	Inbound
NET Wt:	24960 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
12.48	TN	**Wood Timbers**		
1.00		**State of Maine Fee - $2 per Ton**		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

SIGNATURE:

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

SITE	TICKET	WEIGHMASTER
AR	74878	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
12:35 pm 01/18/18	12:36 pm 01/18/18	SWS 507	Roll Off

REFERENCE	Wynn Casino - Everett

1003
Charter Contracting Company, LLC
500 Harrison Avenue Suite 404R
Boston, MA 02118

GROSS:	62920 lbs	Man. Wt. In	Invoice
TARE:	39640 lbs	Man. Wt. Out	Inbound
NET Wt:	23280 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
11.64	**TN**	**Wood Timbers**		
1.00		**State of Maine Fee - $2 per Ton**		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

SIGNATURE:

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL **Timbers** / piles

E. TRANSPORTER INFORMATION **Date of shipment:** 1-15-18

Name of Transporter: Shipyard waste Truck Name & No: 506

Truck/Tractor Registration: 960327 Trailer Registration:

circle one below

Load 1> Date: 1/15 Time: 7:46 Fac. Sig: ARC RWebber DT / 3X / 10W 12.48

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL ~~Timbers~~ Wood Piles

E. TRANSPORTER INFORMATION **Date of shipment:** 01/18/18

Name of Transporter: Shipyard Waste Sol Truck Name & No: 507

Truck/Tractor Registration: 507 Trailer Registration:

circle one below

Load 1> Date: 1/18 Time: 12:35 Fac. Sig: ARC Rubble DT / 3X / 10W 11.64

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

ARC

1002
Shipyard Waste Solutions
PO Box 546
Eliot, ME 03903

Charter

SITE	TICKET	WEIGHMASTER
AR	75091	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
11:37 am 01/22/18	11:48 am 01/22/18	SWS 506	Roll Off

REFERENCE	SWS
6179-1 SPS New England - 95 Behen St. -	Wynn

GROSS:	61960 lbs	Scale In	Invoice
TARE:	38820 lbs	Scale Out	Inbound
NET Wt:	23140 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
11.57	**TN**	**Wood Pilings**		
1.00		**State of Maine Fee - $2 per Ton**		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

SIGNATURE:

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL **Timbers**

E. TRANSPORTER INFORMATION **Date of shipment:** 1-22-18

Name of Transporter: shipyard waste Truck Name & No: 506

Truck/Tractor Registration: 960327 Trailer Registration: N/A

				circle one below
Load 1>	Date:	Time:	Fac. Sig:	DT / 3X / 10W
Load 2>	Date:	Time:	Fac. Sig:	DT / 3X / 10W
Load 3>	Date:	Time:	Fac. Sig:	DT / 3X / 10W
Load 4>	Date:	Time:	Fac. Sig:	DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

ARC

SITE	TICKET	WEIGHMASTER
AR	75567	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
8:14 am 01/29/18	8:28 am 01/29/18	SWS 507	Roll Off

REFERENCE	Creosote Wood Timbers
6179-1 SPS New England - 95 Behen St. -	

1331
SPS New England Inc.
98 Elm Street
Salisbury, MA 01952

Charter

GROSS:	64960 lbs	Scale In	Invoice
TARE:	39180 lbs	Scale Out	Inbound
NET Wt:	25780 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
12.89	**TN**	**Wood Timbers**		
1.00		**State of Maine Fee - $2 per Ton**		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

SIGNATURE:

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL **Timbers**

E. TRANSPORTER INFORMATION **Date of shipment:**

Name of Transporter: Shipyard Waste Sol Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 1/29 Time: 8:14 Fac. Sig: ARC DT / 3X / 10W 12.89

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

ARC

SITE	TICKET	WEIGHMASTER
AR	75614	RODW

DATE IN	DATE OUT	VEHICLE	DESCRIPTION / CONTAINER
11:35 am 01/29/18	11:47 am 01/29/18	SWS 507	Roll Off

REFERENCE	Creosote Wood Timbers
6179-1 SPS New England - 95 Behen St. -	

1331
SPS New England Inc.
98 Elm Street
Salisbury, MA 01952

Charter

GROSS:	56400 lbs	Scale In	Invoice
TARE:	39360 lbs	Scale Out	Inbound
NET Wt:	17040 lbs		

QUANTITY	UNIT	DESCRIPTION	RATE	TOTAL
8.52	**TN**	**Wood Timbers**		
1.00		**State of Maine Fee - $2 per Ton**		

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

NET TOTAL	
TENDERED	
CHANGE	
CHECK NO.	

SIGNATURE:

CHARTER CONTRACTING COMPANY, LLC

MATERIAL SHIPPING RECORD & LOG

PWO: 2-1627

A. GENERATOR / SITE INFORMATION

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

B. TRANSPORTER / COMMON CARRIER INFORMATION

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

C. RECEIVING FACILTY INFORMATION

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

D. DESCRIPTION OF MATERIAL **Timbers**

E. TRANSPORTER INFORMATION **Date of shipment:** 1-29-18

Name of Transporter: Shi'oyandhaste Sal Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 1/29 Time: 11:35 Fac. Sig: ARC RWebber DT / 3X / 10W 8.52

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: EVERETT STAGING YARD
2. Street Address: 1 HORIZON WAY
3. City/Town: EVERETT 4. Zip Code: 021490000

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.
☐ a. Tier I ☐ b. Tier ID ☑ c. Tier II

B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☐ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility. Response Actions associated with this BOL (check all that apply):

- ☐ a. Immediate Response Action (IRA)
- ☐ b. Release Abatement Measure (RAM)
- ☐ c. Downgradient Property Status (DPS)
- ☐ d. Utility Release Abatement Measure (URAM)
- ☐ e. Comprehensive Response Actions
- ☐ f. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
- ☐ g. Other _____

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):
☑ 3. Submit an Attestation of **Completion of Shipment to a Receiving Facility** (Sections C, F and J are not required):
☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void**. (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: 10/23/2017 (mm/dd/yyyy) b. eDEP Transaction ID: 965815

6. Period of Generation Associated with this Bill of Lading 10/16/2017 (mm/dd/yyyy) to 1/22/2018 (mm/dd/yyyy)

(All sections of this transmittal form must be filled out unless otherwise noted above)

The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media/Debris (check all that apply):

☐ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris

☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other: _____

2. Uncontainerized Waste (check all that apply):

☐ a. Inorganic Absorbent Materials ☐ b. Other: _____

C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other: _____

4. Estimated Quantity: _____ ☐ Tons ☐ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☐ d. Other: _____

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☐ k. Other: _____

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☐ f. EPH/TPH ☐ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other: _____

8. If applicable, check the box for the Reportable Concentration Category of the site:

☐ a. RCS-1 ☐ b. RCS-2 ☐ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☐ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☐ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: _____ (mm/dd/yyyy) ii. Type of Documentation: _____

D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: PC TRUCKING, INC.

2. Contact First Name: JOYCE 3. Last Name: POLCARO

4. Street: 15 ELLINGTON RD 5. Title: PRESIDENT

6. City/Town: TEWKSBURY 7. State: MA 8. Zip Code: 018760000

9. Telephone: 9788514467 10. Ext: _____ 11. Email: pctrucking@comcast.net

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: WM OF ME - CROSSROADS LANDFILL
2. Contact First Name: ELLEN 3. Last Name: BELLIO
4. Street: 357 MERCER ROAD 5. Title: WASTE APPROVALS MANAGER
6. City/Town: NORRIDGEWOCK 7. State: ME 8. Zip Code: 049570000
9. Telephone: 2076342714 10. Ext: 11. Email:
12. Type of facility: (check one)

a. Temporary Storage i. Period of Temporary Storage _____ (mm/dd/yyyy) to _____ (mm/dd/yyyy)

ii. Reason for Temporary Storage:

☐ b. Asphalt Batch/Hot Mix ☑ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover

☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:

13. Division of Hazardous Waste/Class A Permit Number:
14. Division of Solid Waste Permit Number: S-010735-WD-QO-M, S-010735-WD-IF-N
15. EPA Identification Number:

F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:
2. First Name: 3. Last Name:
4. Telephone: 5. Ext: 6. Email:
7. Signature: 9. LSP Stamp:
8. Date: _____ (mm/dd/yyyy)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☐ a. change in contact name ☑ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: WYNN MA LLC

3. Contact First Name: ROBERT 4. Last Name: DESALVIO

5. Street: 101 STATION LANDING FLOOR 2 6. Title: PRESIDENT

7. City/Town: MEDFORD 8. State: MA 9. Zip Code: 021550000

10. Telephone: 8577707000 11. Ext: 12. Email: robert.desalvio@wynnresorts.com

H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: ELIGIBLE OWNER/OPERATOR

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions: Specify Relationship: _____

I. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to BWSC.eDEP@state.ma.us

☐ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING:

1. I, _____, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: PRESIDENT

4. For: WYNN MA LLC 5. Date: _____
(Name of person or entity recorded in Section G) (mm/dd/yyyy)

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (MassDEP USE ONLY):

Received by DEP on 4/17/2018 1:37:08 PM

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

SUMMARY OF SHIPMENT SHEET 1 **OF** 2

BWSC 112A

Release Tracking Number
3 - 13341

A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):

1. Date of Shipment: (mm/dd/yyyy)	2. Date of Receipt: (mm/dd/yyyy)	3. Number of Loads Shipped:	4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals
10/30/2017	10/30/2017	6	186.72
10/31/2017	10/31/2017	4	127.19
11/1/2017	11/1/2017	4	133.46
11/2/2017	11/2/2017	5	159.96
11/3/2017	11/3/2017	7	244.71
11/6/2017	11/6/2017	10	336.79
11/7/2017	11/7/2017	17	554.22
11/8/2017	11/8/2017	16	517.05
11/9/2017	11/9/2017	22	723.32
11/10/2017	11/10/2017	21	695.14
11/13/2017	11/13/2017	14	469.18
11/14/2017	11/14/2017	15	512.04
11/15/2017	11/15/2017	20	656.06
11/16/2017	11/16/2017	22	689.63
11/17/2017	11/17/2017	29	891.37
11/21/2017	11/21/2017	5	159.35
11/22/2017	11/22/2017	16	515.53
11/24/2017	11/24/2017	14	449.66
11/27/2017	11/27/2017	12	382.7
11/29/2017	11/29/2017	16	518.49
5. Totals Recorded on this Summary of Shipment Sheet:		275	8922.57

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

SUMMARY OF SHIPMENT SHEET 2 **OF** 2

BWSC 112A

Release Tracking Number
3 - 13341

A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):

1. Date of Shipment: (mm/dd/yyyy)	2. Date of Receipt: (mm/dd/yyyy)	3. Number of Loads Shipped:	4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals
11/30/2017	11/30/2017	11	375.33
12/1/2017	12/1/2017	15	493.16
12/4/2017	12/4/2017	18	577.9
12/5/2017	12/5/2017	19	628.06
12/6/2017	12/6/2017	12	392.28
12/7/2017	12/7/2017	16	523.39
12/8/2017	12/8/2017	20	645.45
12/11/2017	12/11/2017	11	350.01
12/12/2017	12/12/2017	14	442.91
12/13/2017	12/13/2017	11	350.35
12/14/2017	12/14/2017	11	365.46
12/15/2017	12/15/2017	15	488.98
12/19/2017	12/19/2017	12	403.1
12/20/2017	12/20/2017	17	537.15
12/21/2017	12/21/2017	11	372.05
12/22/2017	12/22/2017	6	198.51
12/28/2017	12/28/2017	7	227.31
1/2/2018	1/2/2018	3	98.01
1/3/2018	1/3/2018	12	401.95
1/4/2018	1/4/2018	3	101.08
5. Totals Recorded on this Summary of Shipment Sheet:		244	7972.44

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 112B

Release Tracking Number
3 - 13341

BILL OF LADING (pursuant to 310 CMR 40.0030)
SUMMARY SHEET SIGNATURE PAGE

A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:

1. I, JEFF MCGOWN, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: JEFF MCGOWN 3. Title: DISTRICT MANAGER

4. For: WASTE MGMT OF ME (CROSSROADS) 5. Date: 4/12/2018 (mm/dd/yyyy)

6. Date of Final Shipment asociated with this Bill of lading: 11/30/2017 (mm/dd/yyyy)

B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:

1. I, ROBERT DESALVIO, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT DESALVIO 3. Title: PRESIDENT

4. For: WYNN MA LLC (Name of person or entity recorded in Section G) 5. Date: 4/17/2018 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: EVERETT STAGING YARD

2. Street Address: 1 HORIZON WAY

3. City/Town: EVERETT 4. Zip Code: 021490000

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.
☐ a. Tier I ☐ b. Tier ID ☑ c. Tier II

B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☐ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility. Response Actions associated with this BOL (check all that apply):

- ☐ a. Immediate Response Action (IRA)
- ☐ b. Release Abatement Measure (RAM)
- ☐ c. Downgradient Property Status (DPS)
- ☐ d. Utility Release Abatement Measure (URAM)
- ☐ e. Comprehensive Response Actions
- ☐ f. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
- ☐ g. Other _____

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):
☑ 3. Submit an Attestation of **Completion of Shipment to a Receiving Facility** (Sections C, F and J are not required):
☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void**. (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: 10/20/2017 (mm/dd/yyyy) b. eDEP Transaction ID: 965493

6. Period of Generation Associated with this Bill of Lading 10/16/2017 (mm/dd/yyyy) to 1/22/2018 (mm/dd/yyyy)

(All sections of this transmittal form must be filled out unless otherwise noted above)

The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media/Debris (check all that apply):

☐ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris

☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other: _____

2. Uncontainerized Waste (check all that apply):

☐ a. Inorganic Absorbent Materials ☐ b. Other: _____

C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other: _____

4. Estimated Quantity: _____ ☐ Tons ☐ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☐ d. Other: _____

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☐ k. Other: _____

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☐ f. EPH/TPH ☐ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other: _____

8. If applicable, check the box for the Reportable Concentration Category of the site:

☐ a. RCS-1 ☐ b. RCS-2 ☐ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☐ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☐ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: _____ (mm/dd/yyyy) ii. Type of Documentation: _____

D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: CHARTER CONTRACTING CO LLC

2. Contact First Name: JON 3. Last Name: SIMPSON

4. Street: 500 HARRISON AVENUE, 4R 5. Title: PROJECT MANAGER

6. City/Town: BOSTON 7. State: MA 8. Zip Code: 021180000

9. Telephone: 8572466801 10. Ext: _____ 11. Email: jsimpson@charter.us

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: WM OF ME - CROSSROADS LANDFILL
2. Contact First Name: ELLEN 3. Last Name: BELLIO
4. Street: 357 MERCER ROAD 5. Title: WASTE APPROVALS MANAGER
6. City/Town: NORRIDGEWOCK 7. State: ME 8. Zip Code: 049570000
9. Telephone: 2076342714 10. Ext: 11. Email:
12. Type of facility: (check one)

a. Temporary Storage i. Period of Temporary Storage _____ (mm/dd/yyyy) to _____ (mm/dd/yyyy)

ii. Reason for Temporary Storage:

☐ b. Asphalt Batch/Hot Mix ☑ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover

☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:

13. Division of Hazardous Waste/Class A Permit Number:
14. Division of Solid Waste Permit Number:
15. EPA Identification Number:

F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:
2. First Name: 3. Last Name:
4. Telephone: 5. Ext: 6. Email:
7. Signature: 9. LSP Stamp:
8. Date: (mm/dd/yyyy)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☑ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: WYNN MA LLC

3. Contact First Name: ROBERT 4. Last Name: DESALVIO

5. Street: 101 STATION LANDING FLOOR 2 6. Title: PRESIDENT

7. City/Town: MEDFORD 8. State: MA 9. Zip Code: 021550000

10. Telephone: 8577707000 11. Ext: 12. Email: robert.desalvio@wynnresorts.com

H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: ELIGIBLE OWNER/OPERATOR

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions: Specify Relationship:

I. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to BWSC.eDEP@state.ma.us

☐ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING:

1. I, _____, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: PRESIDENT

4. For: WYNN MA LLC 5. Date: _____
(Name of person or entity recorded in Section G) (mm/dd/yyyy)

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (MassDEP USE ONLY):

Received by DEP on 4/17/2018 1:41:29 PM

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

SUMMARY OF SHIPMENT SHEET 1 **OF** 2

BWSC 112A

Release Tracking Number
3 - 13341

A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):

1. Date of Shipment: (mm/dd/yyyy)	2. Date of Receipt: (mm/dd/yyyy)	3. Number of Loads Shipped:	4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals
10/26/2017	10/26/2017	15	486.78
10/27/2017	10/27/2017	9	290.14
1/8/2018	1/8/2018	13	431.15
1/9/2018	1/9/2018	8	260.98
1/10/2018	1/10/2018	10	324.67
1/11/2018	1/11/2018	13	437.84
1/12/2018	1/12/2018	10	332.94
1/15/2018	1/15/2018	22	743.55
1/16/2018	1/16/2018	21	705.83
1/17/2018	1/17/2018	17	565.08
1/18/2018	1/18/2018	13	425.57
1/19/2018	1/19/2018	12	414.66
1/22/2018	1/22/2018	21	693.41
1/23/2018	1/23/2108	17	567.72
1/24/2018	1/24/2018	7	229.58
1/25/2018	1/25/2018	3	106.33
1/26/2018	1/26/2018	2	66.07
1/29/2018	1/29/2018	5	166.3
1/30/2018	1/30/2018	2	66.93
1/31/2018	1/31/2018	4	133.84
5. Totals Recorded on this Summary of Shipment Sheet:		224	7449.37

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

SUMMARY OF SHIPMENT SHEET 2 **OF** 2

BWSC 112A

Release Tracking Number
3 - 13341

A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):

1. Date of Shipment: (mm/dd/yyyy)	2. Date of Receipt: (mm/dd/yyyy)	3. Number of Loads Shipped:	4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals
2/1/2018	2/1/2018	1	33.48
2/6/2018	2/6/2018	1	32.47
2/7/2018	2/7/2018	1	30.4
2/21/2018	2/21/2018	1	14.17
2/22/2018	2/22/2018	1	17.07
2/27/2018	2/27/2018	2	30.25
2/28/2018	2/28/2018	6	151.11
3/1/2018	3/1/2018	3	93.48
3/2/2018	3/2/2018	1	15.06
3/20/2018	3/20/2108	2	58.69
3/21/2018	3/21/2018	1	36.85
3/23/2018	3/23/2018	4	145.61
3/29/2018	3/29/2018	1	31.3
3/30/2018	3/30/2018	1	21.8
5. Totals Recorded on this Summary of Shipment Sheet:		26	711.74

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 112B

Release Tracking Number
3 - 13341

BILL OF LADING (pursuant to 310 CMR 40.0030)
SUMMARY SHEET SIGNATURE PAGE

A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:

1. I, JEFF MCGOWN, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: JEFF MCGOWN 3. Title: DISTRICT MANAGER

4. For: WASTE MGMT OF ME (CROSSROADS) 5. Date: 4/12/2018 (mm/dd/yyyy)

6. Date of Final Shipment asociated with this Bill of lading: 1/17/2018 (mm/dd/yyyy)

B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:

1. I, ROBERT DESALVIO, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT DESALVIO 3. Title: PRESIDENT

4. For: WYNN MA LLC (Name of person or entity recorded in Section G) 5. Date: 4/17/2018 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section G.

7. Street:

8. City/Town: 9. State: 10. Zip Code:

11. Telephone: 12. Ext: 13. Email:

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: EVERETT STAGING YARD
2. Street Address: 1 HORIZON WAY
3. City/Town: EVERETT 4. Zip Code: 021490000

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.
☐ a. Tier I ☐ b. Tier ID ☑ c. Tier II

B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☐ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility. Response Actions associated with this BOL (check all that apply):

- ☐ a. Immediate Response Action (IRA)
- ☐ b. Release Abatement Measure (RAM)
- ☐ c. Downgradient Property Status (DPS)
- ☐ d. Utility Release Abatement Measure (URAM)
- ☐ e. Comprehensive Response Actions
- ☐ f. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
- ☐ g. Other

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):
☑ 3. Submit an Attestation of **Completion of Shipment to a Receiving Facility** (Sections C, F and J are not required):
☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void**. (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: 11/8/2017 (mm/dd/yyyy) b. eDEP Transaction ID: 969559

6. Period of Generation Associated with this Bill of Lading 10/16/2017 (mm/dd/yyyy) to 3/20/2018 (mm/dd/yyyy)

(All sections of this transmittal form must be filled out unless otherwise noted above)

The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media/Debris (check all that apply):

☐ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris

☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other:

2. Uncontainerized Waste (check all that apply):

☐ a. Inorganic Absorbent Materials ☐ b. Other:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other: _____

4. Estimated Quantity: _____ ☐ Tons ☐ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☐ d. Other: _____

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☐ k. Other: _____

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☐ f. EPH/TPH ☐ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other: _____

8. If applicable, check the box for the Reportable Concentration Category of the site:

☐ a. RCS-1 ☐ b. RCS-2 ☐ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☐ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☐ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: _____ (mm/dd/yyyy) ii. Type of Documentation: _____

D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: CHARTER CONTRACTING CO LLC

2. Contact First Name: JON 3. Last Name: SIMPSON

4. Street: 500 HARRISON AVENUE, 4R 5. Title: PROJECT MANAGER

6. City/Town: BOSTON 7. State: MA 8. Zip Code: 021180000

9. Telephone: 8572466801 10. Ext: _____ 11. Email: jsimpson@charter.us

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: SUNNY FARMS LANDFILL
2. Contact First Name: MICHAEL 3. Last Name: KOZAK
4. Street: 12500 W COUNTY RD 18 5. Title: SENIOR VICE PRESIDENT
6. City/Town: FOSTORIA 7. State: OH 8. Zip Code: 448300000
9. Telephone: 4194360505 10. Ext: 11. Email: mkozak@tunnelhillpartners.com
12. Type of facility: (check one)

a. Temporary Storage i. Period of Temporary Storage _____ (mm/dd/yyyy) to _____ (mm/dd/yyyy)

ii. Reason for Temporary Storage:

☐ b. Asphalt Batch/Hot Mix ☑ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover

☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:

13. Division of Hazardous Waste/Class A Permit Number:
14. Division of Solid Waste Permit Number: OHIO EPA PTI 676460
15. EPA Identification Number:

F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:
2. First Name: 3. Last Name:
4. Telephone: 5. Ext: 6. Email:
7. Signature: 9. LSP Stamp:
8. Date: (mm/dd/yyyy)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☐ a. change in contact name ☑ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: WYNN MA LLC

3. Contact First Name: ROBERT 4. Last Name: DESALVIO

5. Street: 101 STATION LANDING FLOOR 2 6. Title: PRESIDENT

7. City/Town: MEDFORD 8. State: MA 9. Zip Code: 021550000

10. Telephone: 8577707000 11. Ext: 12. Email: robert.desalvio@wynnmass.com

H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: ELIGIBLE OWNER/OPERATOR

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions: Specify Relationship:

I. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to BWSC.eDEP@state.ma.us

☐ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING:

1. I, _____, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: PRESIDENT

4. For: WYNN MA LLC 5. Date: _____
(Name of person or entity recorded in Section G) (mm/dd/yyyy)

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (MassDEP USE ONLY):

Received by DEP on 6/14/2018 10:37:43 AM

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

SUMMARY OF SHIPMENT SHEET 1 **OF** 2

BWSC 112A

Release Tracking Number
3 - 13341

A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):

1. Date of Shipment: (mm/dd/yyyy)	2. Date of Receipt: (mm/dd/yyyy)	3. Number of Loads Shipped:	4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals
11/10/2017	11/22/2017	15	494.11
11/13/2017	12/6/2017	15	527.55
11/14/2017	12/6/2017	24	854.82
11/15/2017	12/6/2017	9	313.76
11/21/2017	11/29/2017	15	512.7
11/22/2017	11/30/2017	12	424.9
11/27/2017	12/16/2017	9	303.86
11/29/2017	12/16/2017	9	315.40
11/30/2017	12/16/2017	9	322.08
12/1/2017	12/16/2017	9	320.29
12/4/2017	12/16/2017	9	311.74
12/5/2017	12/16/2017	9	311.54
12/6/2017	12/16/2017	9	309.94
12/7/2017	12/16/2017	15	508.2
12/11/2017	12/20/2017	12	405.78
12/11/2017	12/22/2017	3	98.72
12/12/2017	12/22/2017	9	292.66
12/13/2017	12/19/2017	9	292.03
12/13/2017	1/8/2018	6	183.51
12/14/2017	1/8/2018	15	530.35
5. Totals Recorded on this Summary of Shipment Sheet:		222	7633.94

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

SUMMARY OF SHIPMENT SHEET 2 **OF** 2

BWSC 112A

Release Tracking Number
3 - 13341

A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):

1. Date of Shipment: (mm/dd/yyyy)	2. Date of Receipt: (mm/dd/yyyy)	3. Number of Loads Shipped:	4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals
12/15/2017	12/21/2017	3	106.51
12/15/2017	1/8/2018	6	205.75
12/19/2017	1/8/2018	15	533.47
12/20/2017	1/8/2018	15	530.01
12/21/2017	1/8/2018	15	523.56
12/22/2017	1/8/2018	12	401.21
12/27/2017	1/8/2018	12	419.05
12/28/2017	1/11/2018	9	309.96
12/29/2017	1/11/2018	6	211.07
1/2/2018	1/11/2018	9	316.57
1/3/2018	1/15/2018	9	313.60
1/15/2018	1/24/2018	9	320.18
5. Totals Recorded on this Summary of Shipment Sheet:		120	4190.94

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)
SUMMARY SHEET SIGNATURE PAGE

BWSC 112B

Release Tracking Number
3 - 13341

A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:

1. I, MICHAEL KOZAK, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: MICHAEL KOZAK 3. Title:

4. For: TUNNEL HILL PARTNERS 5. Date: 5/30/2018 (mm/dd/yyyy)

6. Date of Final Shipment asociated with this Bill of lading: 1/15/2018 (mm/dd/yyyy)

B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:

1. I, ROBERT DESALVIO, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT DESALVIO 3. Title: PRESIDENT

4. For: WYNN MA LLC (Name of person or entity recorded in Section G) 5. Date: 6/14/2018 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section G.

7. Street:

8. City/Town: 9. State: 10. Zip Code:

11. Telephone: 12. Ext: 13. Email:

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: EVERETT STAGING YARD
2. Street Address: 1 HORIZON WAY
3. City/Town: EVERETT 4. Zip Code: 021490000

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.
☐ a. Tier I ☐ b. Tier ID ☑ c. Tier II

B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☐ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility.
Response Actions associated with this BOL (check all that apply):

☐ a. Immediate Response Action (IRA)
☐ b. Release Abatement Measure (RAM)
☐ c. Downgradient Property Status (DPS)
☐ d. Utility Release Abatement Measure (URAM)
☐ e. Comprehensive Response Actions
☐ f. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
☐ g. Other

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):
☑ 3. Submit an Attestation of **Completion of Shipment to a Receiving Facility** (Sections C, F and J are not required):
☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void**. (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: 10/13/2017 (mm/dd/yyyy) b. eDEP Transaction ID: 961891

6. Period of Generation Associated with this Bill of Lading 10/16/2017 (mm/dd/yyyy) to 1/22/2018 (mm/dd/yyyy)

(All sections of this transmittal form must be filled out unless otherwise noted above)

The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media/Debris (check all that apply):

☐ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris

☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other:

2. Uncontainerized Waste (check all that apply):

☐ a. Inorganic Absorbent Materials ☐ b. Other:

C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other: _____

4. Estimated Quantity: _____ ☐ Tons ☐ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☐ d. Other: _____

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☐ k. Other: _____

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☐ f. EPH/TPH ☐ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other: _____

8. If applicable, check the box for the Reportable Concentration Category of the site:

☐ a. RCS-1 ☐ b. RCS-2 ☐ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☐ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☐ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: _____ (mm/dd/yyyy) ii. Type of Documentation: _____

D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: PC TRUCKING, INC.

2. Contact First Name: JOYCE 3. Last Name: POLCARO

4. Street: 15 ELLINGTON RD 5. Title: PRESIDENT

6. City/Town: TEWKSBURY 7. State: MA 8. Zip Code: 018760000

9. Telephone: 9788514467 10. Ext: _____ 11. Email: _____

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: WM TREE TURNKEY LANDFILL
2. Contact First Name: ELLEN 3. Last Name: BELLIO
4. Street: 90 ROCHESTER NECK ROAD 5. Title: WASTE APPROVALS MANAGER
6. City/Town: ROCHESTER 7. State: NH 8. Zip Code: 038397065
9. Telephone: 8009634776 10. Ext: 11. Email: ebellio@wm.com
12. Type of facility: (check one)

a. Temporary Storage i. Period of Temporary Storage _____ (mm/dd/yyyy) to _____ (mm/dd/yyyy)

ii. Reason for Temporary Storage:

☐ b. Asphalt Batch/Hot Mix ☑ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover

☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:

13. Division of Hazardous Waste/Class A Permit Number:
14. Division of Solid Waste Permit Number: DES-SW-SP-95-001
15. EPA Identification Number:

F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:
2. First Name: 3. Last Name:
4. Telephone: 5. Ext: 6. Email:
7. Signature: 9. LSP Stamp:
8. Date: (mm/dd/yyyy)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 13341

G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☐ a. change in contact name ☑ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: WYNN MA LLC

3. Contact First Name: ROBERT 4. Last Name: DESALVIO

5. Street: 101 STATION LANDING FLOOR 2 6. Title: PRESIDENT

7. City/Town: MEDFORD 8. State: MA 9. Zip Code: 021550000

10. Telephone: 8577707000 11. Ext: 12. Email: robert.desalvio@wynnresorts.com

H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: ELIGIBLE OWNER/OPERATOR

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions: Specify Relationship:

I. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to BWSC.eDEP@state.ma.us

☐ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING:

1. I, _____, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: PRESIDENT

4. For: WYNN MA LLC 5. Date: _____
(Name of person or entity recorded in Section G) (mm/dd/yyyy)

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (MassDEP USE ONLY):

Received by DEP on 4/17/2018 1:41:58 PM

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 112B

Release Tracking Number
3 - 13341

BILL OF LADING (pursuant to 310 CMR 40.0030)
SUMMARY SHEET SIGNATURE PAGE

A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:

1. I, ROBERT S MAGNUSSON, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT S MAGNUSSON 3. Title:

4. For: WASTE MANAGEMENT OF NH (TREE) 5. Date: 4/15/2018 (mm/dd/yyyy)

6. Date of Final Shipment asociated with this Bill of lading: 11/30/2017 (mm/dd/yyyy)

B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:

1. I, ROBERT DESALVIO, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT DESALVIO 3. Title: PRESIDENT

4. For: WYNN MA LLC (Name of person or entity recorded in Section G) 5. Date: 4/17/2018 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section G.

7. Street:

8. City/Town: 9. State: 10. Zip Code:

11. Telephone: 12. Ext: 13. Email:

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets

APPENDIX D

Debris Survey

Debris Survey Report

Project Title:	Wynn Sediment Remediation Project Everett, Massachusetts 1 Horizon Way Everett, MA
Prepared For:	Danielle Ahern Amec Foster Wheeler 271 Mill Road Chelmsford, MA 01824 T: 978-692-9090
Prepared By:	Charter Contracting Company, LLC 500 Harrison Avenue, Suite 4R Boston, MA 02118 T: 857-246-6800
Contract No.:	
PWO No.:	2-1627
Date:	October 10, 2017
Version No.:	00

Helmut Ernst

Helmut Ernst, PE, Project Manager
978-360-6436 E: HErnst@spsnewengland.com

10/10/2017

Date

Katherine M. Mason

Katherine Mason, Project Manager
857-246-6820 E: Kmason@charter.us

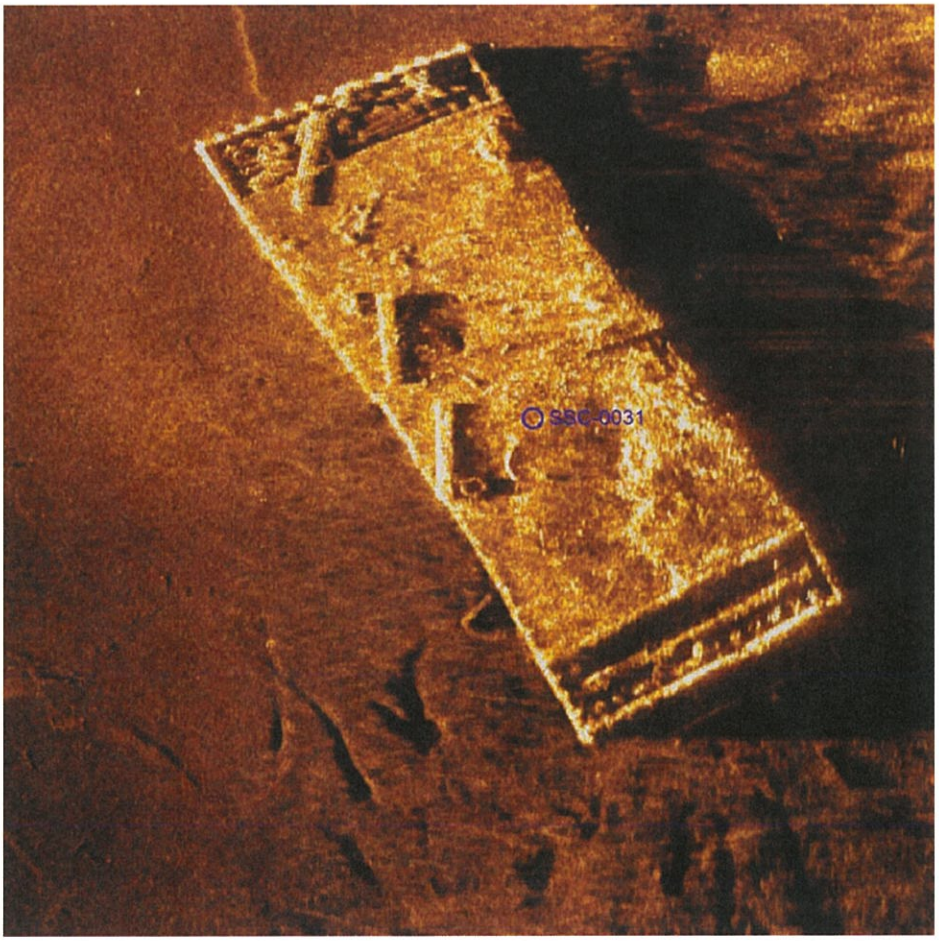
10/10/2017

Date

Wynn Boston Harbor Sediment Remediation Debris Survey

Debris Targets Report

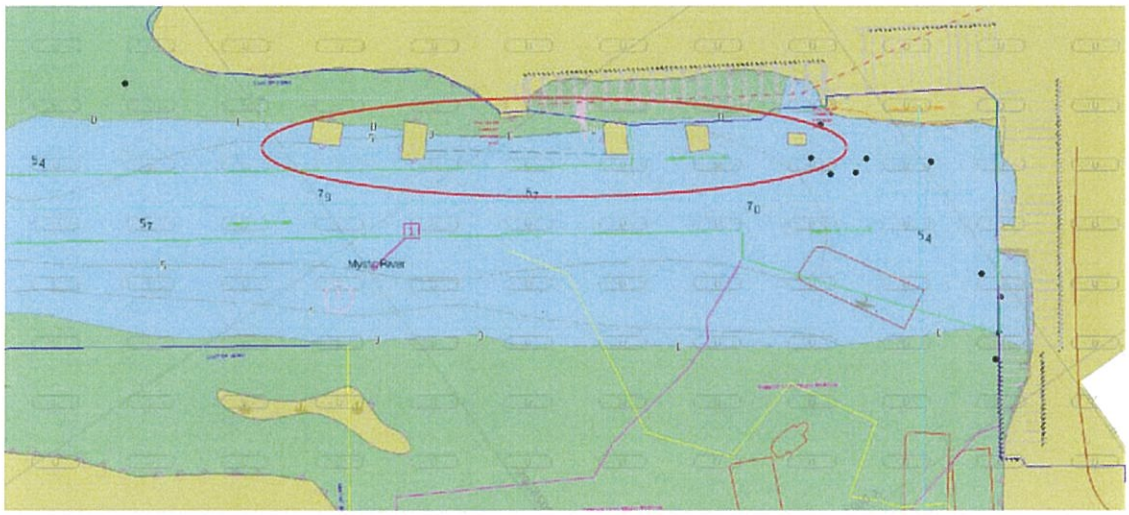
Steele Associates Marine Consultants, LLC.



Wynn Boston Harbor Sediment Remediation Debris Survey

Background

Wynn Boston Harbor sits on the former Monsanto Chemical Plant. The Monsanto plant operated a ship terminal to onload/offload in proximity to the proposed berth set to be dredged. This terminal no longer exists and has been demolished but parts of the dolphin's foundations that were used to berth ships are still existing based on the debris survey in proximity to the dredge area. Many of the targets identified in the side scan survey are believed to be associated with the razed dolphins from the Monsanto ship terminal. Throughout the years it is certain that additional debris has accumulated throughout the project area. To determine the extent of the debris Wynn Charter has requested a debris survey to identify debris targets of interest.



Electronic Chart showing Historical Dolphin Alignment

Photo showing Remains of Dolphin Foundations

Wynn Boston Harbor Sediment Remediation Debris Survey

Photo showing Remains of Dolphin Foundations

Historical Photo of Monsanto Terminal

Historical photo of Ship berthed at Monsanto Terminal

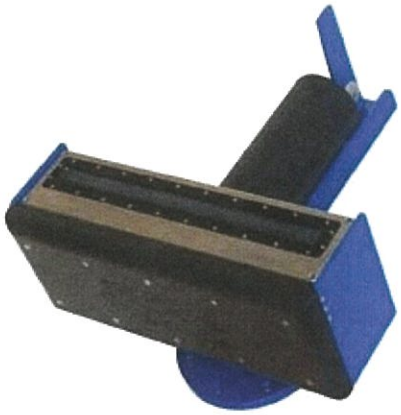
Wynn Boston Harbor Sediment Remediation Debris Survey

Data Collection

Steele Associates conducted the Before Dredge survey according to Army Corps specification with a 200 kHz multi-beam survey of the project area. A 900 kHz side scan survey was collected for the purpose of locating, identifying, measuring, and imaging of debris targets, in addition the 200 kHz multi-beam survey data aided to confirm the side scan imagery.

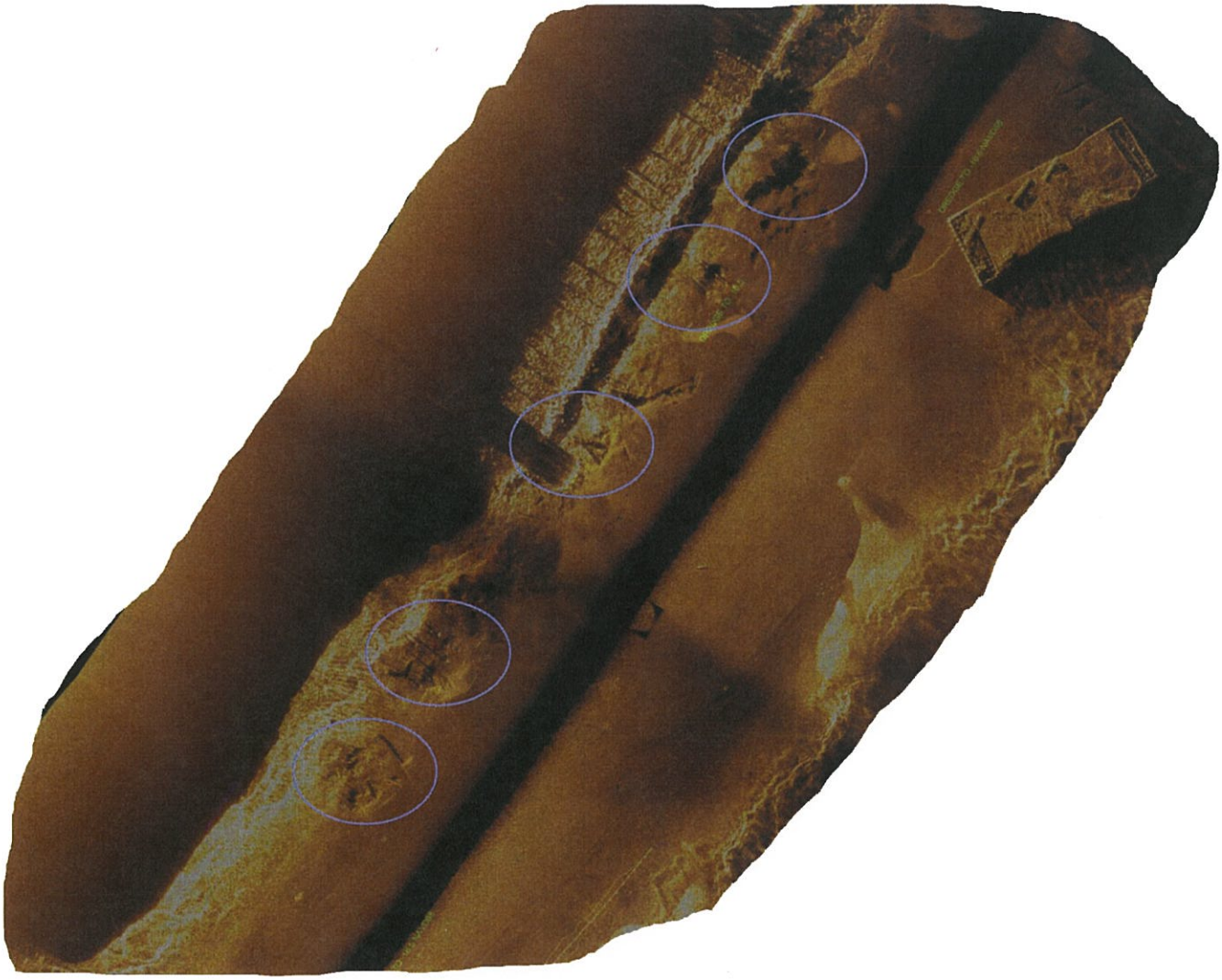
Equipment

An R2Sonic 2024 Mulit-Beam Sonar was used to collect the Before Dredge survey at 200 kHz.



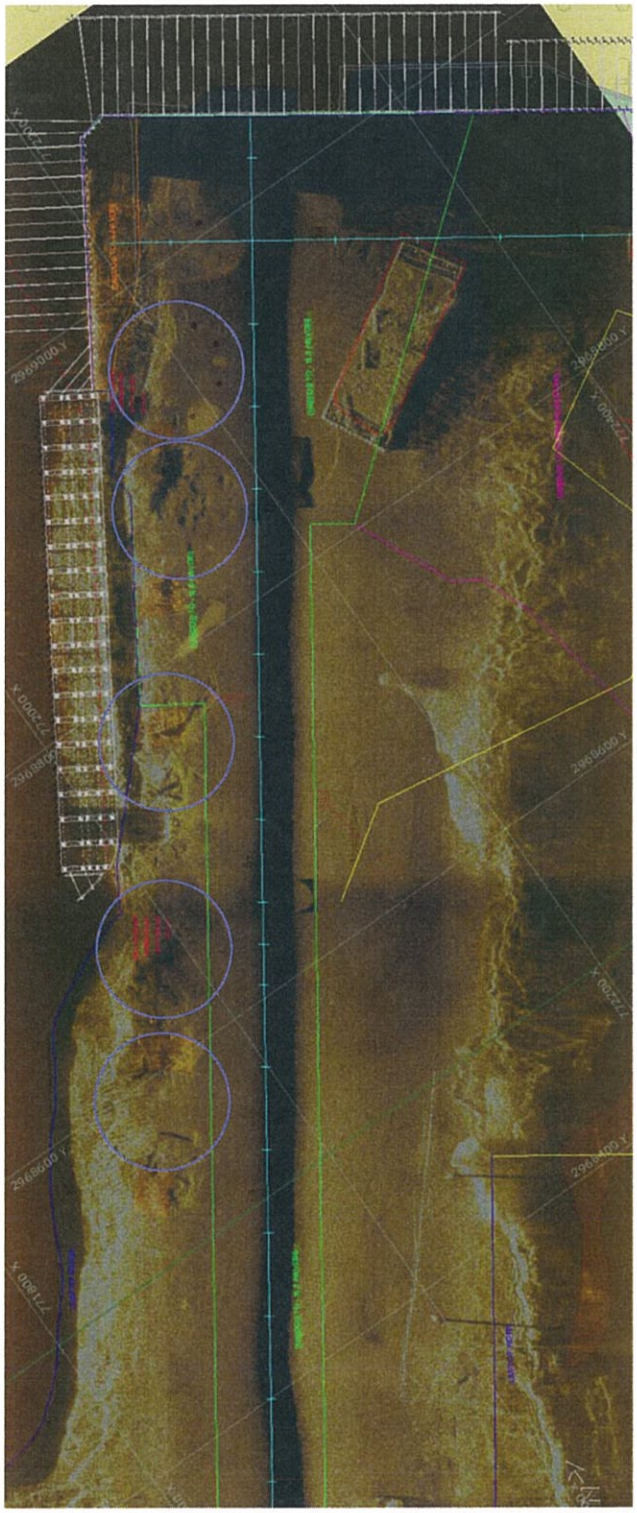
An Edgetech 4125 Side Scan Sonar was used to collect the side scan sonar survey at 900 kHz for the Debris survey.

Wynn Boston Harbor Sediment Remediation Debris Survey



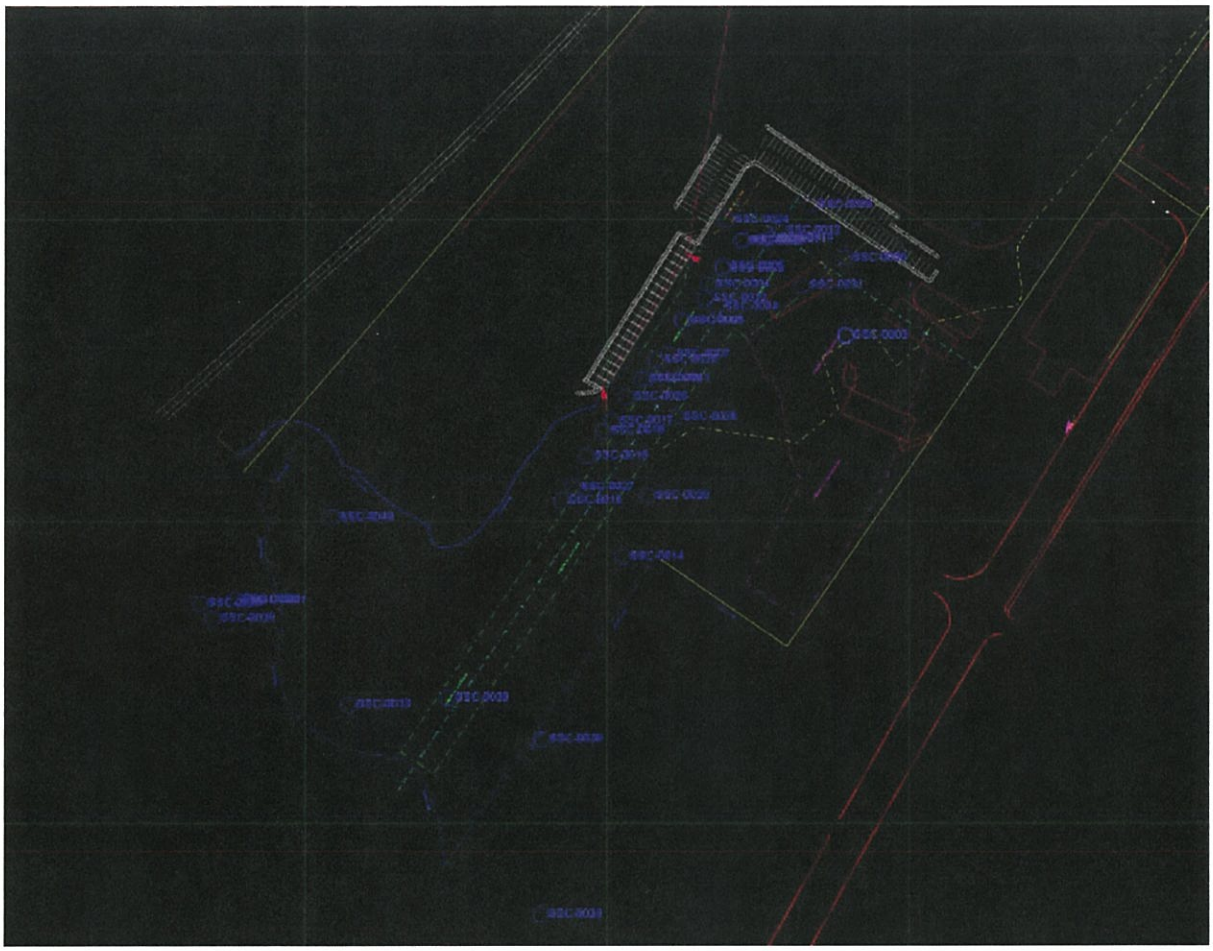
Overview Side Scan Data Imagery with razed foundations highlighted

Wynn Boston Harbor Sediment Remediation Debris Survey

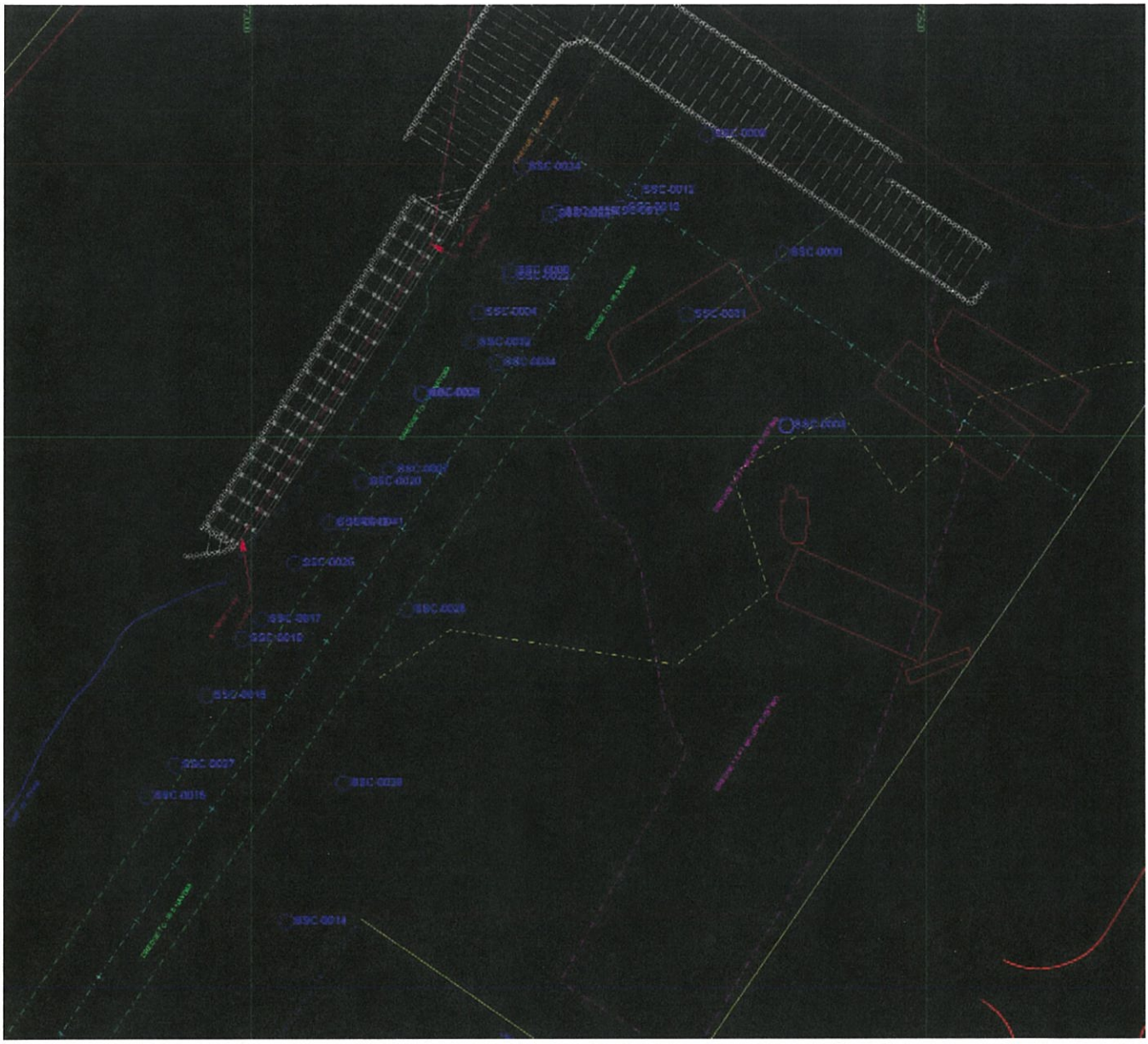


Transparent Side scan imagery, project background and NOAA Chart with razed foundations highlighted

Wynn Boston Harbor Sediment Remediation Debris Survey



General Alignment of Side Scan Targets



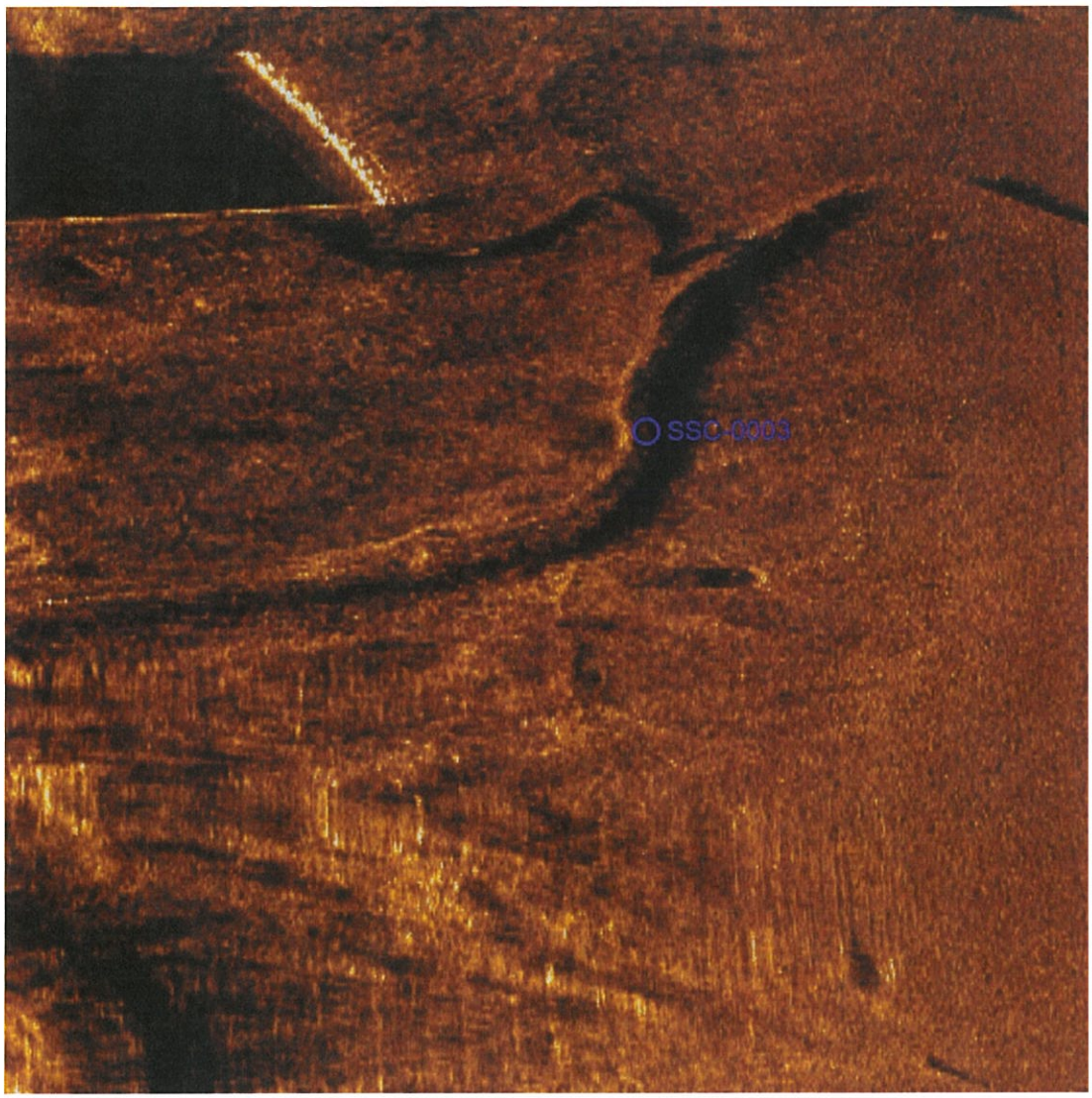
General Alignment of Side Scan Targets (zoom)

Wynn Boston Harbor Sediment Remediation Debris Survey

Target	X	Y
SSC-0003	772396.38	2968807.48
SSC-0004	772167.89	2968891.78
SSC-0005	772125.41	2968831.59
SSC-0006	772191.63	2968923.02
SSC-0007	772102.29	2968775.53
SSC-0008	772394.02	2968935.63
SSC-0009	772337.35	2969023.58
SSC-0010	772273.34	2968969.26
SSC-0011	772262.47	2968966.29
SSC-0012	772284.64	2968981.82
SSC-0013	771571.28	2968195.74
SSC-0014	772026.06	2968440.82
SSC-0015	771922.66	2968533.40
SSC-0016	771966.76	2968607.80
SSC-0017	772007.57	2968664.33
SSC-0018	771993.52	2968649.93
SSC-0019	772057.53	2968735.85
SSC-0020	772081.73	2968766.00
SSC-0021	772126.28	2968831.79
SSC-0022	772191.52	2968918.11
SSC-0023	772221.31	2968964.33
SSC-0024	772199.51	2968999.29
SSC-0025	772114.71	2968671.78
SSC-0026	772031.45	2968705.78
SSC-0027	771943.53	2968556.49
SSC-0028	772067.57	2968542.33
SSC-0029	772226.36	2968966.08
SSC-0030	771891.14	2968138.61
SSC-0031	772322.91	2968890.33
SSC-0032	772163.14	2968869.23
SSC-0033	771889.29	2967848.86
SSC-0034	772181.79	2968854.48
SSC-0035	771347.35	2968339.38
SSC-0036	771326.46	2968364.62
SSC-0037	771400.88	2968368.77
SSC-0038	771383.24	2968370.22
SSC-0039	771734.21	2968206.52
SSC-0040	771544.17	2968505.90
SSC-0041	772068.75	2968736.08

Wynn Boston Harbor Sediment Remediation Debris Survey

Target	X	Y
M-42	772306.51	2968874.43
M-43	772195.67	2968683.11
M-44	772095.20	2968779.56
M-45	772067.99	2968735.97
M-46	771977.36	2968607.21
M-47	771953.31	2968564.72
M-48	771884.94	2968475.90
M-49	771858.16	2968469.50
M-50	771737.06	2968227.88
M-51	771652.07	2968133.62
M-52	771604.44	2968050.69
M-53	771708.17	2968025.99
M-54	771740.45	2968078.85
M-55	771825.63	2968172.04
M-56	771607.75	2968307.84
M-57	771561.04	2968320.18
M-58	771526.00	2968261.19
M-59	771520.65	2968343.76
M-60	772121.77	2968606.16

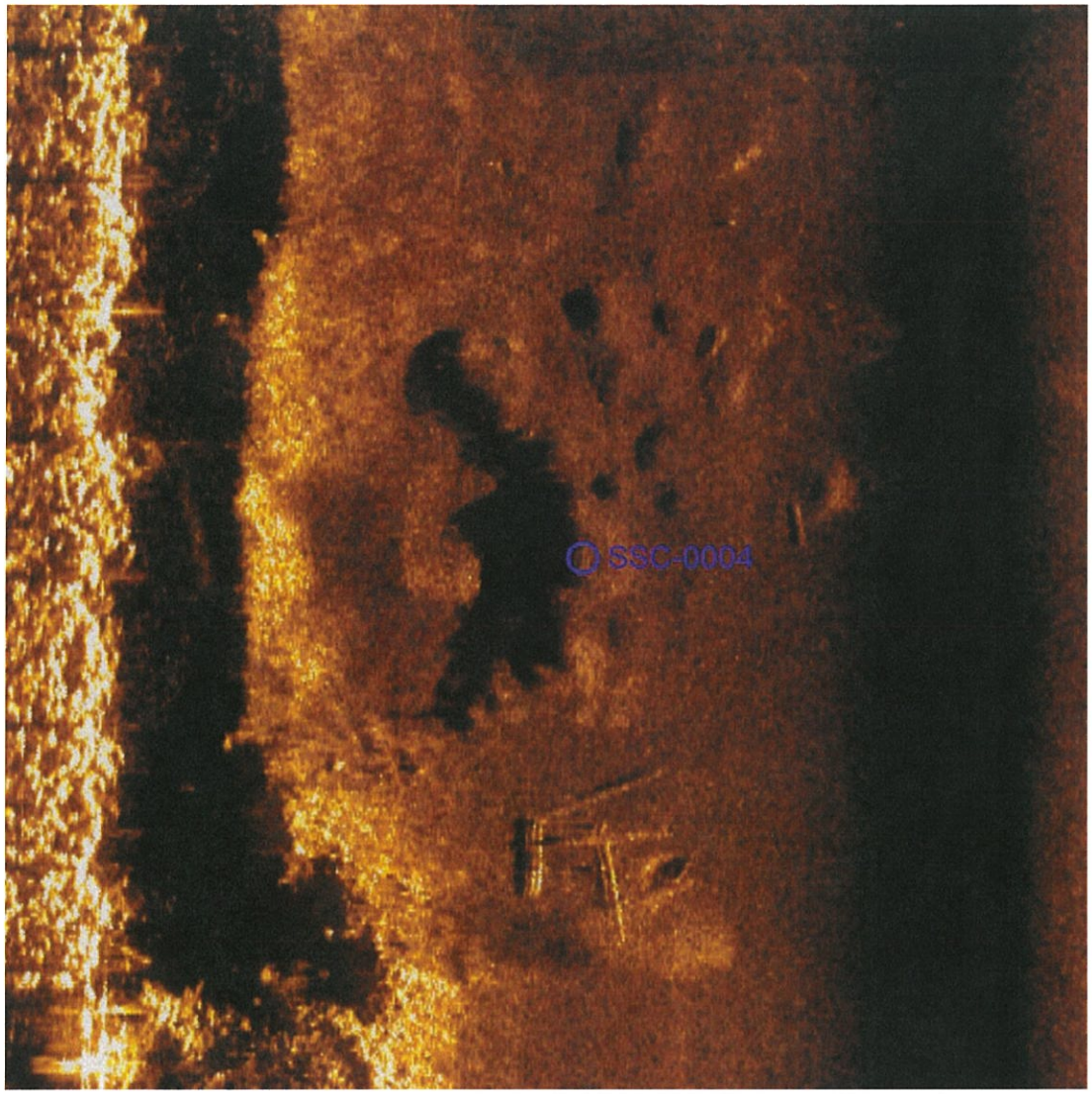


SSC-0003

- Sonar Time at Target: 9/29/2017 8:28:53 PM
- Click Position
  42.3937549120 -71.0697238083 (WGS84)
  42.3936580536 -71.0702277448 (NAD27LL)
  42.3937549120 -71.0697238083 (LocalLL)
  (X) 772396.38 (Y) 2968807.48 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929202828.jsf
- Ping Number: 43598
- Range to target: 59.58 US ft

Dimensions and attributes

- Target Width: 0.00 US ft
- Target Height: 0.45 US ft
- Target Length: 37.45 US ft
- Target Shadow: 7.47 US ft
- Classification1: feature
- Description: Inter-tidal channel

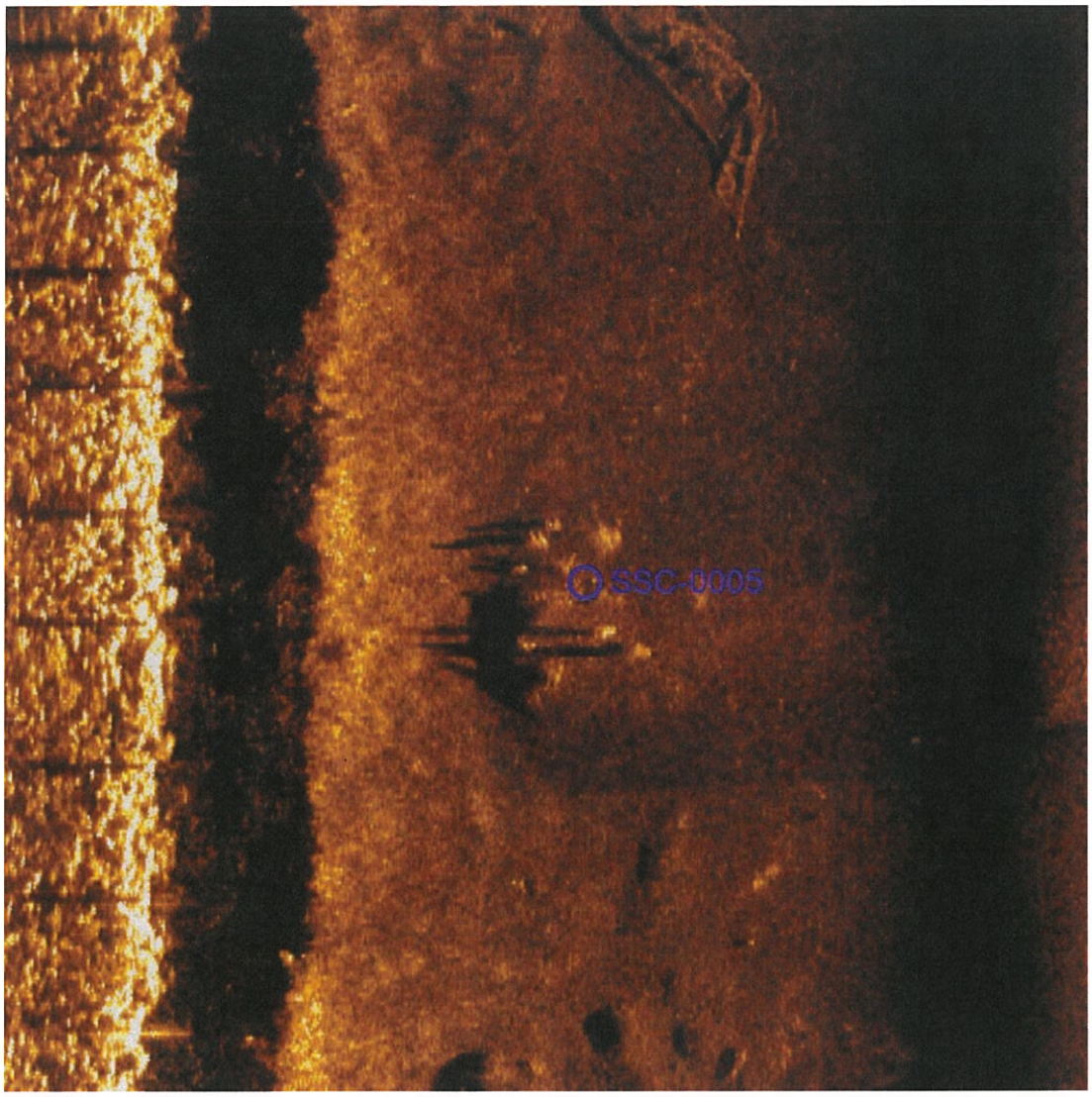


SSC-0004

- Sonar Time at Target: 9/29/2017 8:13:44 PM
- Click Position
  42.3939893910 -71.0705681026 (WGS84)
  42.3938925406 -71.0710720155 (NAD27LL)
  42.3939893910 -71.0705681026 (LocalLL)
  (X) 772167.89 (Y) 2968891.78 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 34852
- Range to target: 39.61 US ft

Dimensions and attributes

- Target Width: 6.58 US ft
- Target Height: 3.23 US ft
- Target Length: 37.08 US ft
- Target Shadow: 13.16 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

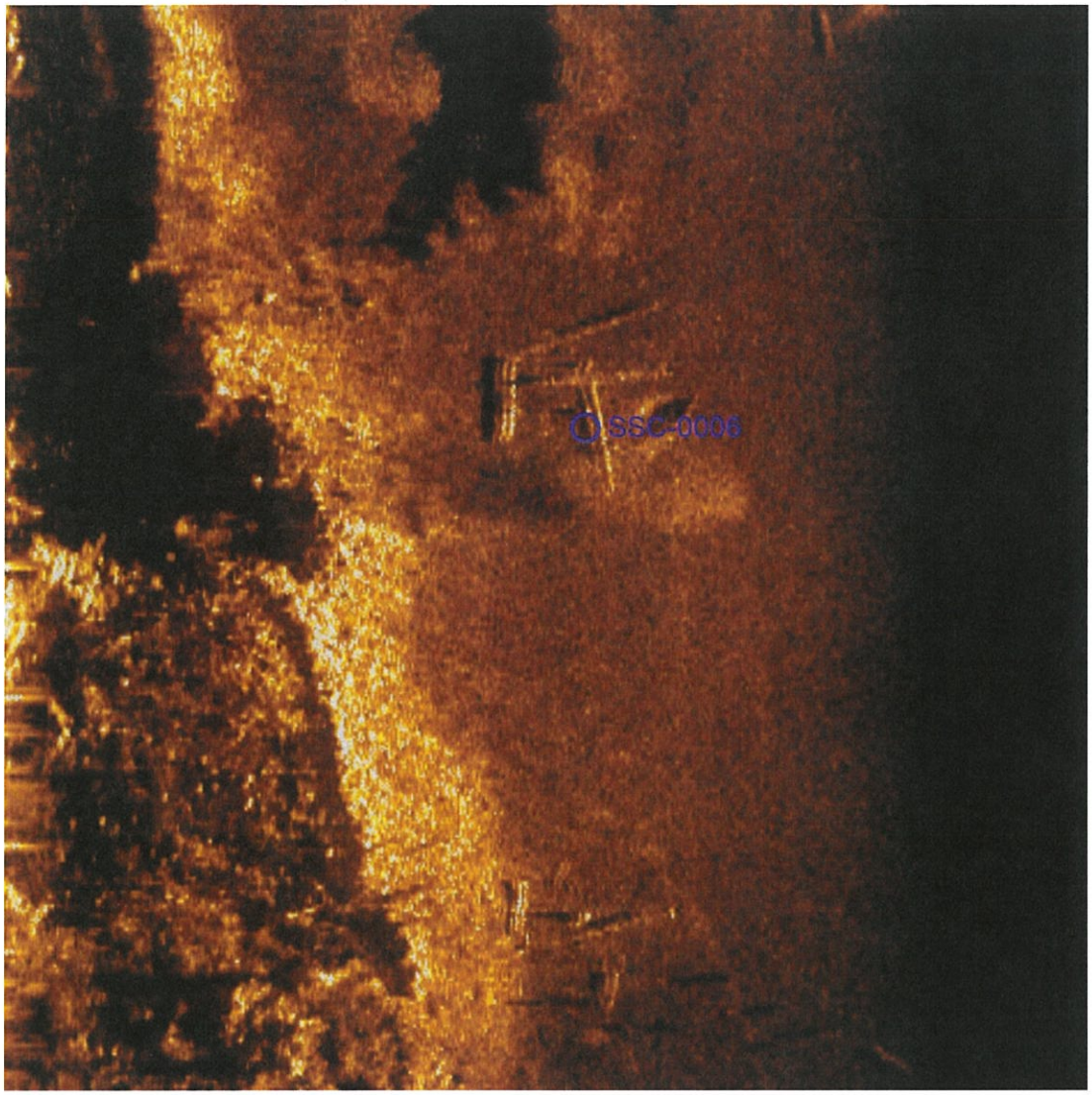


SSC-0005

- Sonar Time at Target: 9/29/2017 8:13:27 PM
- Click Position
  42.3938247932 -71.0707264676 (WGS84)
  42.3937279410 -71.0712303782 (NAD27LL)
  42.3938247932 -71.0707264676 (LocalLL)
  (X) 772125.41 (Y) 2968831.59 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 34689
- Range to target: 41.83 US ft

Dimensions and attributes

- Target Width: 11.33 US ft
- Target Height: 1.39 US ft
- Target Length: 18.87 US ft
- Target Shadow: 5.19 US ft
- Classification1: piling
- Description: Debris associated with demolished dolphin

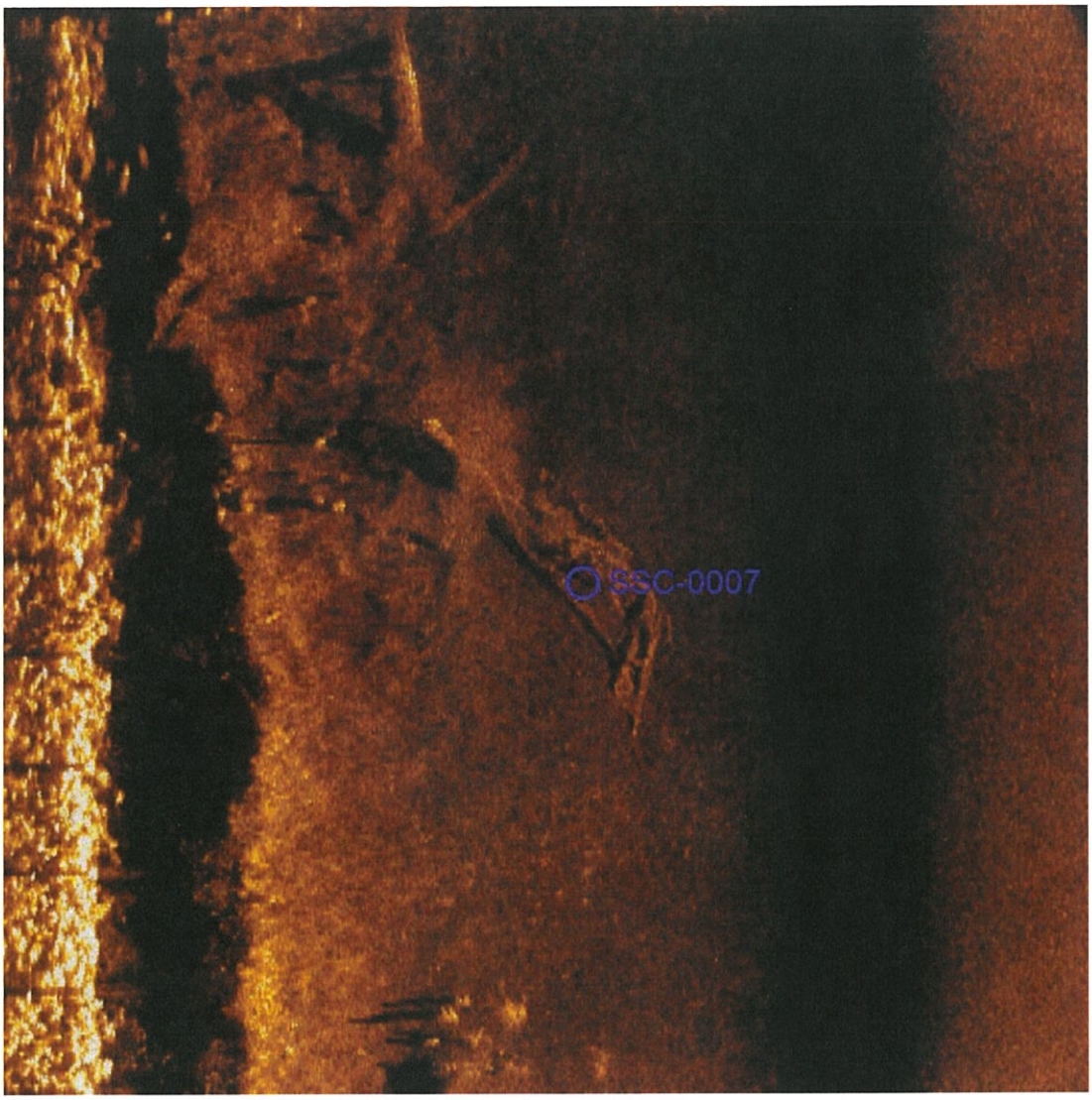


SSC-0006

- Sonar Time at Target: 9/29/2017 8:13:52 PM
- Click Position
  42.3940747730 -71.0704796475 (WGS84)
  42.3939779234 -71.0709835618 (NAD27LL)
  42.3940747730 -71.0704796475 (LocalLL)
  (X) 772191.63 (Y) 2968923.02 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 34929
- Range to target: 37.78 US ft

Dimensions and attributes

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 10.99 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description: Debris associated with demolished dolphin

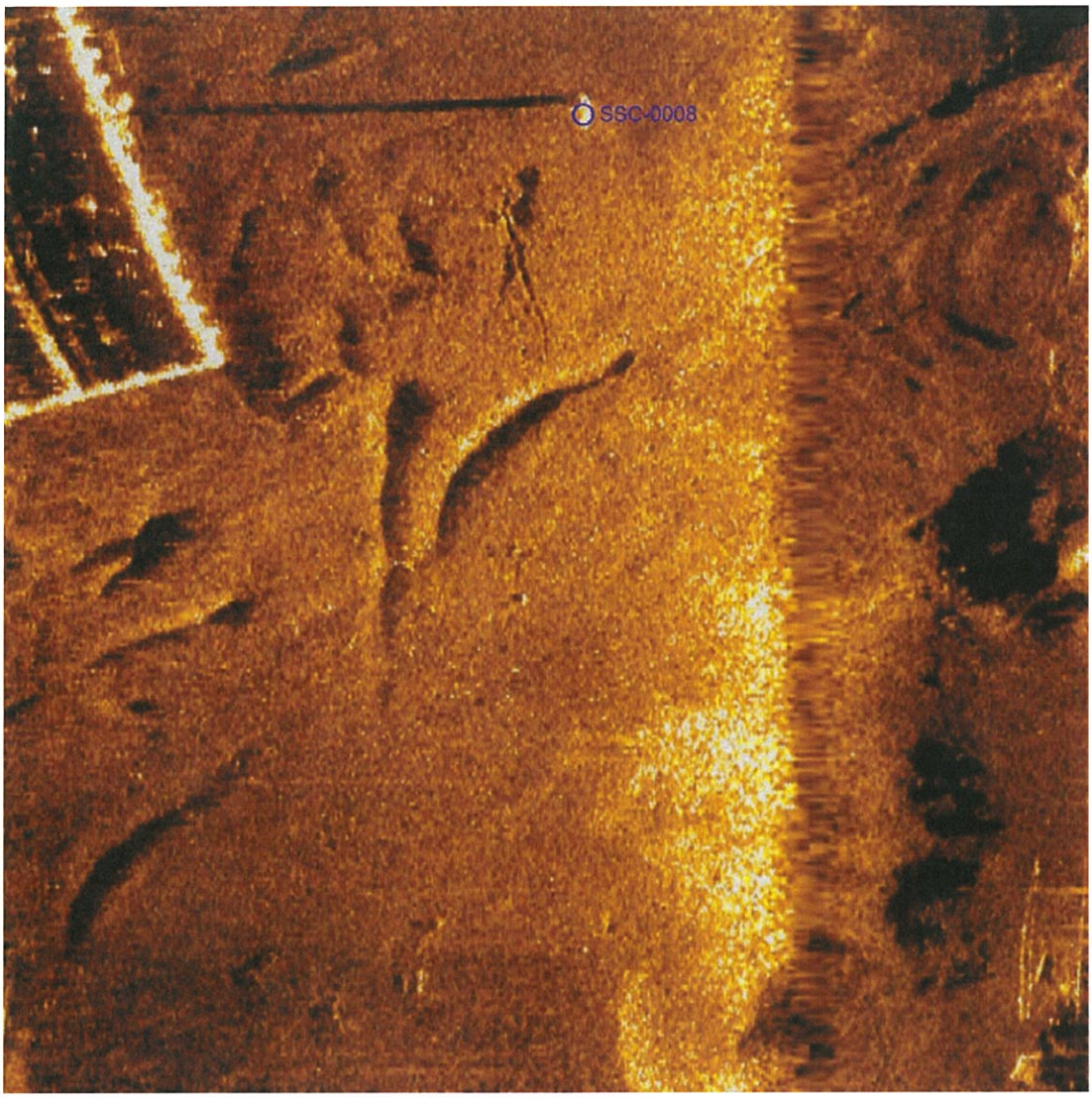


SSC-0007

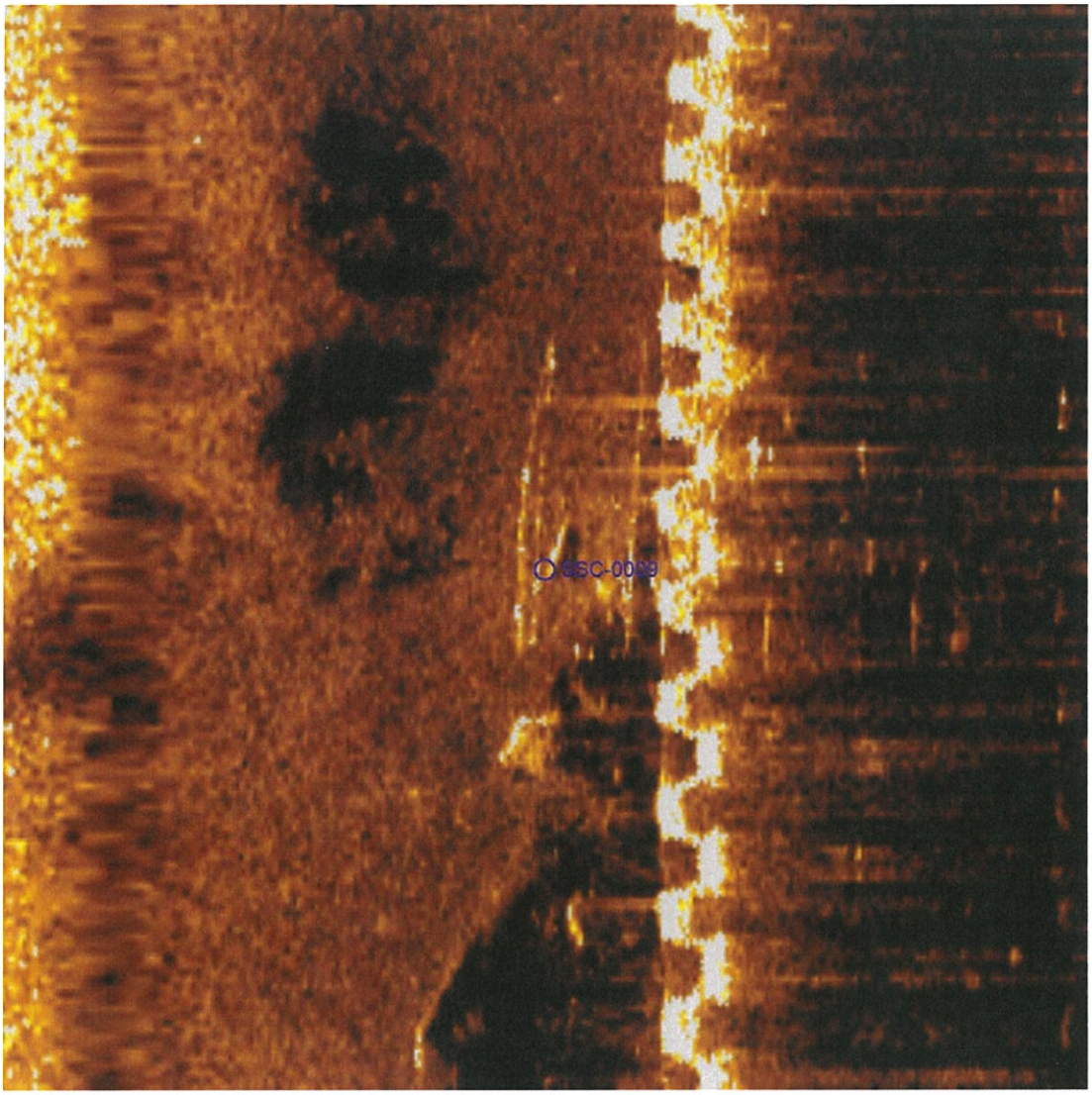
- Sonar Time at Target: 9/29/2017 8:13:14 PM
- Click Position
  42.3936712870 -71.0708131189 (WGS84)
  42.3935744329 -71.0713170288 (NAD27LL)
  42.3936712870 -71.0708131189 (LocalLL)
  (X) 772102.29 (Y) 2968775.53 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 34571
- Range to target: 31.11 US ft

Dimensions and attributes

- Target Width: 6.34 US ft
- Target Height: 0.00 US ft
- Target Length: 29.71 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin



SSC-0008	Dimensions and attributes
• Sonar Time at Target: 9/29/2017 8:41:38 PM • Click Position 42.3941065754 -71.0697301634 (WGS84) 42.3940097226 -71.0702340963 (NAD27LL) 42.3941065754 -71.0697301634 (LocalLL) (X) 772394.02 (Y) 2968935.63 (Projected Coordinates) • Map Projection: MA83F • Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf • Ping Number: 50955 • Range to target: 18.17 US ft	• Target Width: 0.00 US ft • Target Height: 4.01 US ft • Target Length: 0.00 US ft • Target Shadow: 30.56 US ft • Classification1: piling • Description:



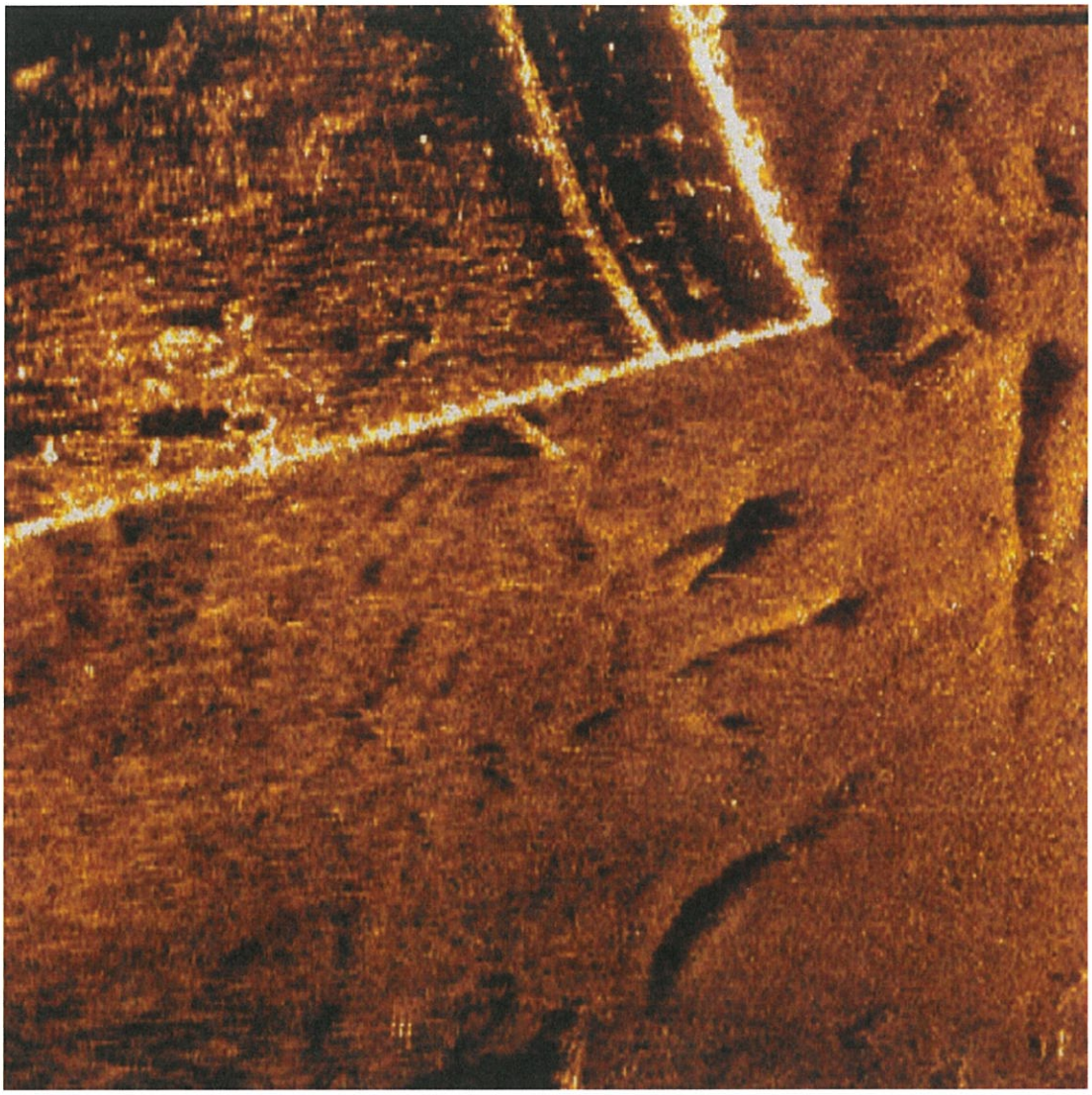
SSC-0009

- Sonar Time at Target: 9/29/2017 8:42:02 PM
- Click Position
  42.3943486989 -71.0699383216 (WGS84)
  42.3942518508 -71.0704422468 (NAD27LL)
  42.3943486989 -71.0699383216 (LocalLL)
  (X) 772337.35 (Y) 2969023.58 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf
- Ping Number: 51186
- Range to target: 18.04 US ft

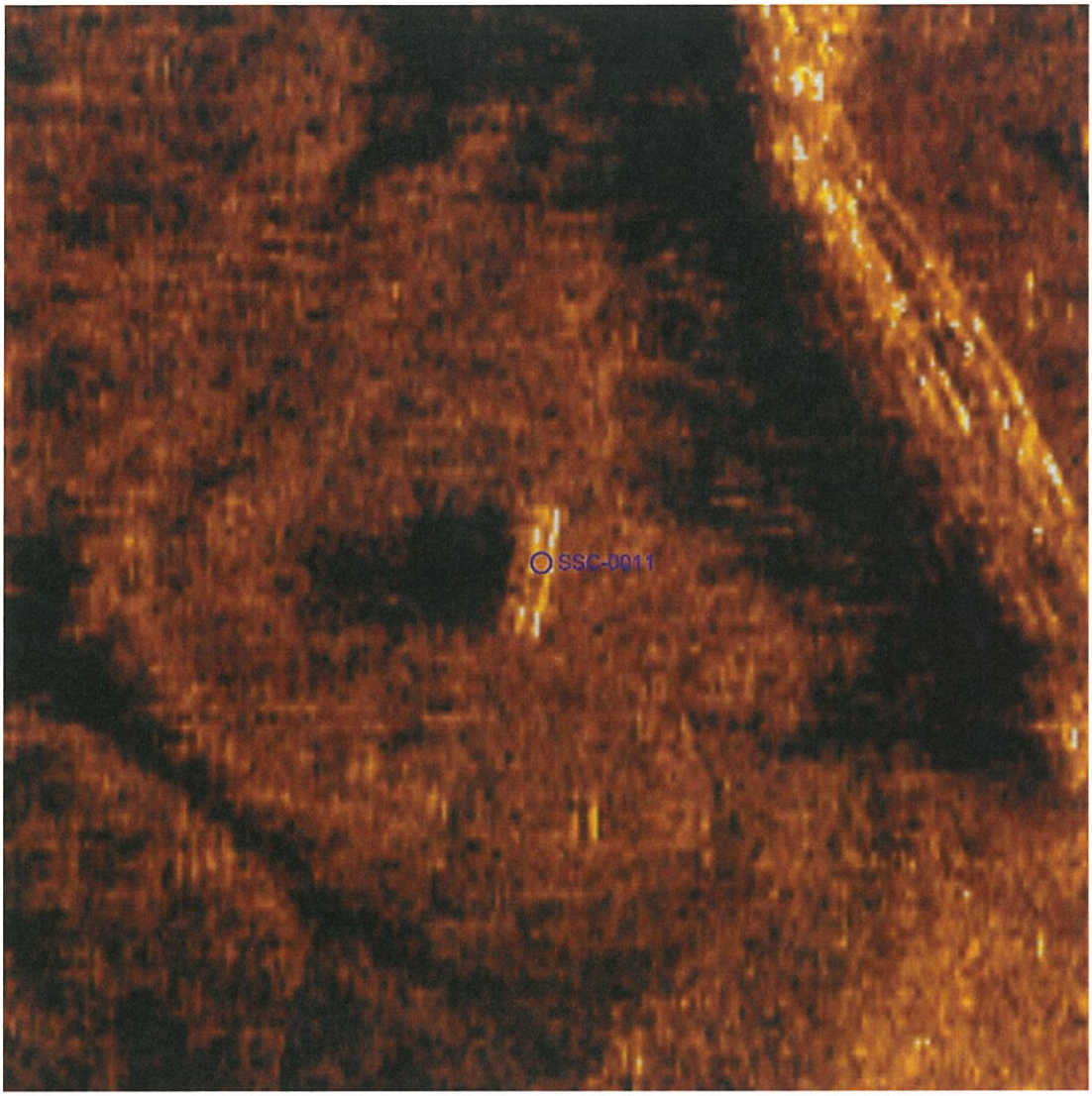
Dimensions and attributes

- Target Width: 4.50 US ft
- Target Height: 0.00 US ft
- Target Length: 10.95 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description: Construction debris from sheet pile installation

Wynn Boston Harbor Sediment Remediation Debris Survey



SSC-0010	Dimensions and attributes
• Sonar Time at Target: 9/29/2017 8:42:08 PM • Click Position 42.3942005319 -71.0701762768 (WGS84) 42.3941036828 -71.0706801975 (NAD27LL) 42.3942005319 -71.0701762768 (LocalLL) (X) 772273.34 (Y) 2968969.26 (Projected Coordinates) • Map Projection: MA83F • Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf • Ping Number: 51244 • Range to target: 64.18 US ft	• Target Width: 3.70 US ft • Target Height: 0.51 US ft • Target Length: 34.70 US ft • Target Shadow: 5.39 US ft • Classification1: debris • Description: Possible wire/piling



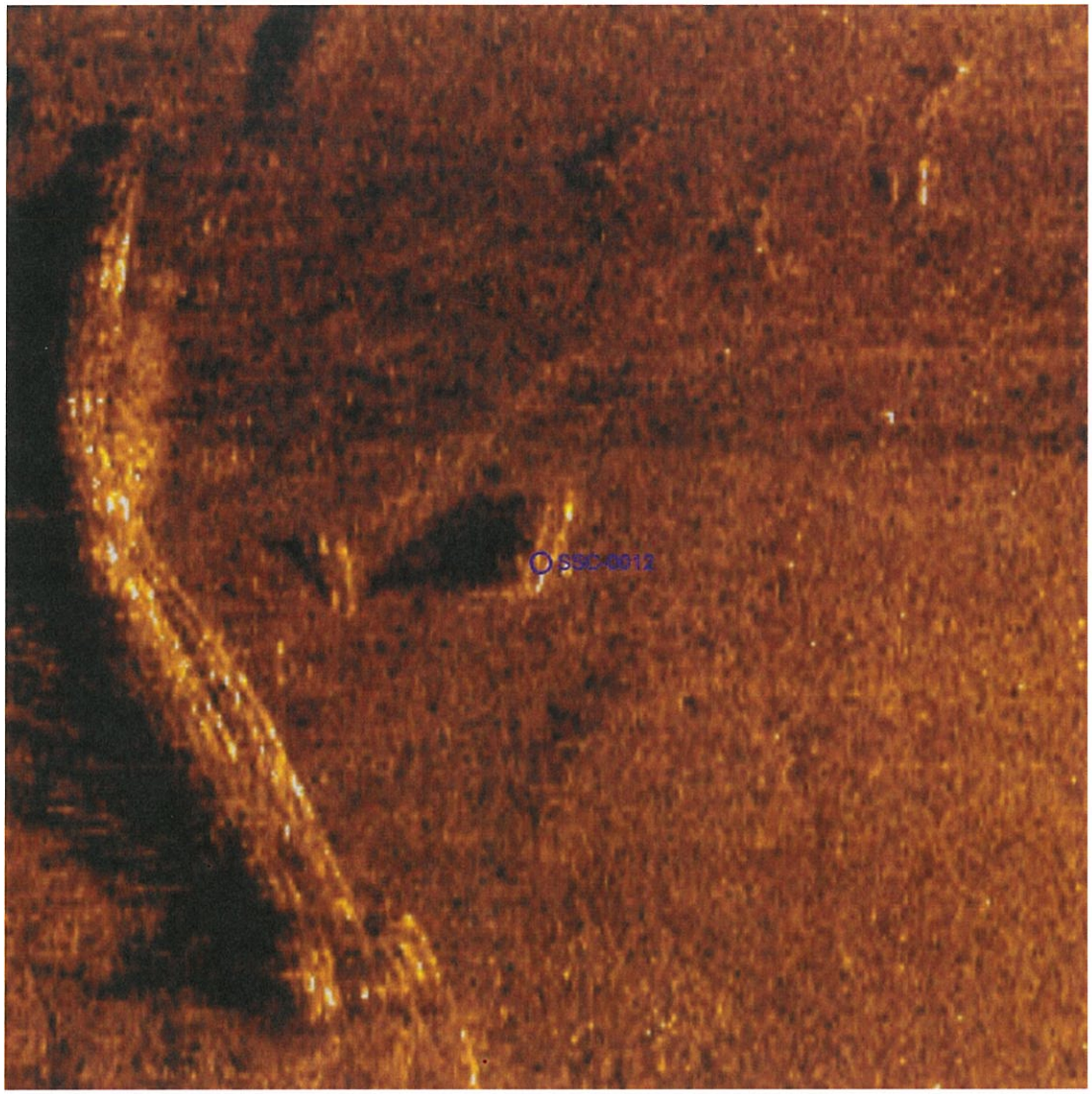
SSC-0011

- Sonar Time at Target: 9/29/2017 8:42:12 PM
- Click Position
  42.3941925239 -71.0702165972 (WGS84)
  42.3940956748 -71.0707205170 (NAD27LL)
  42.3941925239 -71.0702165972 (LocalLL)
  (X) 772262.47 (Y) 2968966.29 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf
- Ping Number: 51281
- Range to target: 73.20 US ft

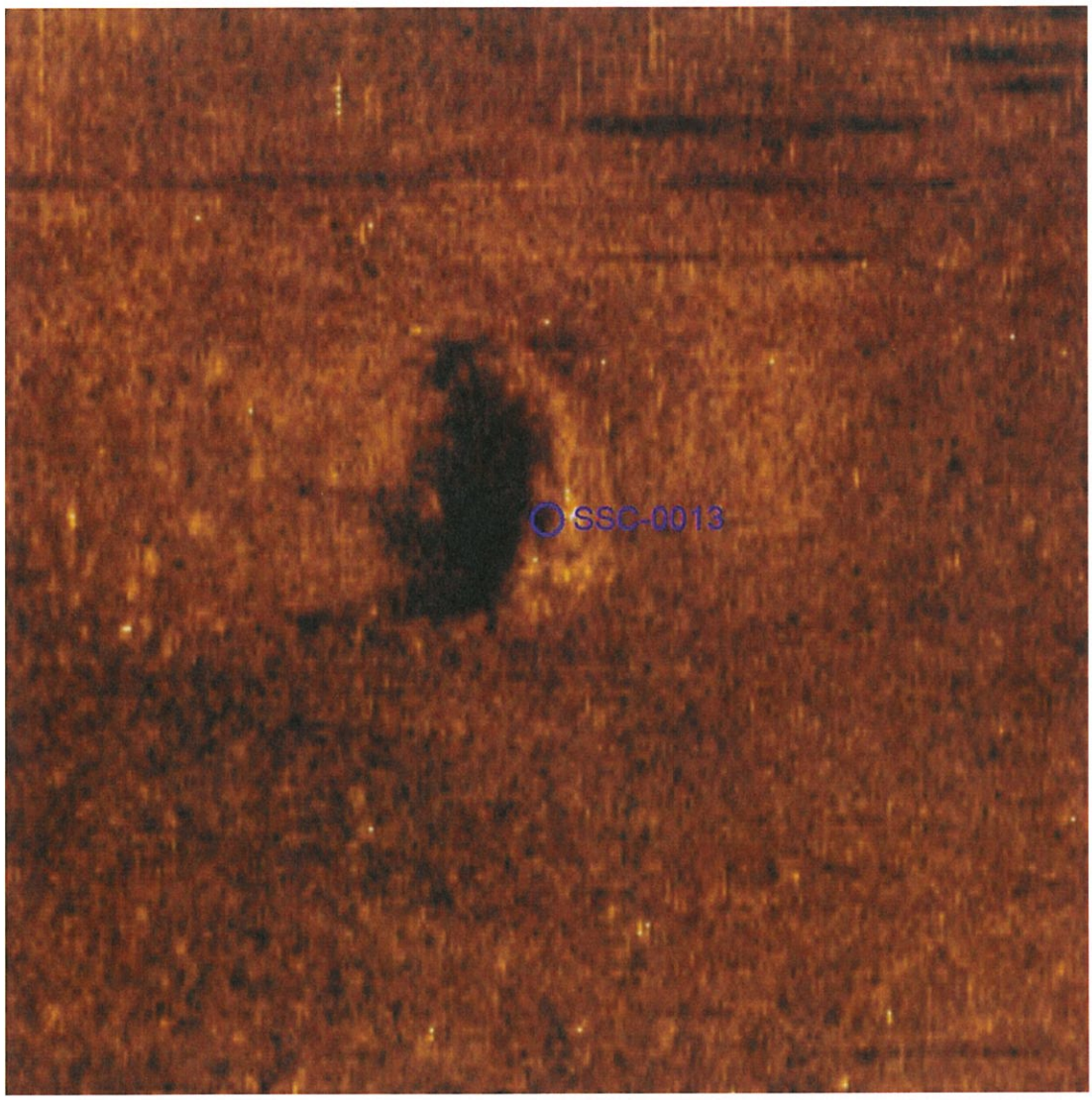
Dimensions and attributes

- Target Width: 1.24 US ft
- Target Height: 0.46 US ft
- Target Length: 3.94 US ft
- Target Shadow: 5.54 US ft
- Classification1: debris
- Description:

Wynn Boston Harbor Sediment Remediation Debris Survey



SSC-0012	Dimensions and attributes
• Sonar Time at Target: 9/29/2017 8:42:07 PM • Click Position 42.3942348362 -71.0701342280 (WGS84) 42.3941379874 -71.0706381494 (NAD27LL) 42.3942348362 -71.0701342280 (LocalLL) (X) 772284.64 (Y) 2968981.82 (Projected Coordinates) • Map Projection: MA83F • Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf • Ping Number: 51240 • Range to target: 47.32 US ft	• Target Width: 2.76 US ft • Target Height: 0.78 US ft • Target Length: 5.38 US ft • Target Shadow: 6.44 US ft • Classification1: debris • Description:



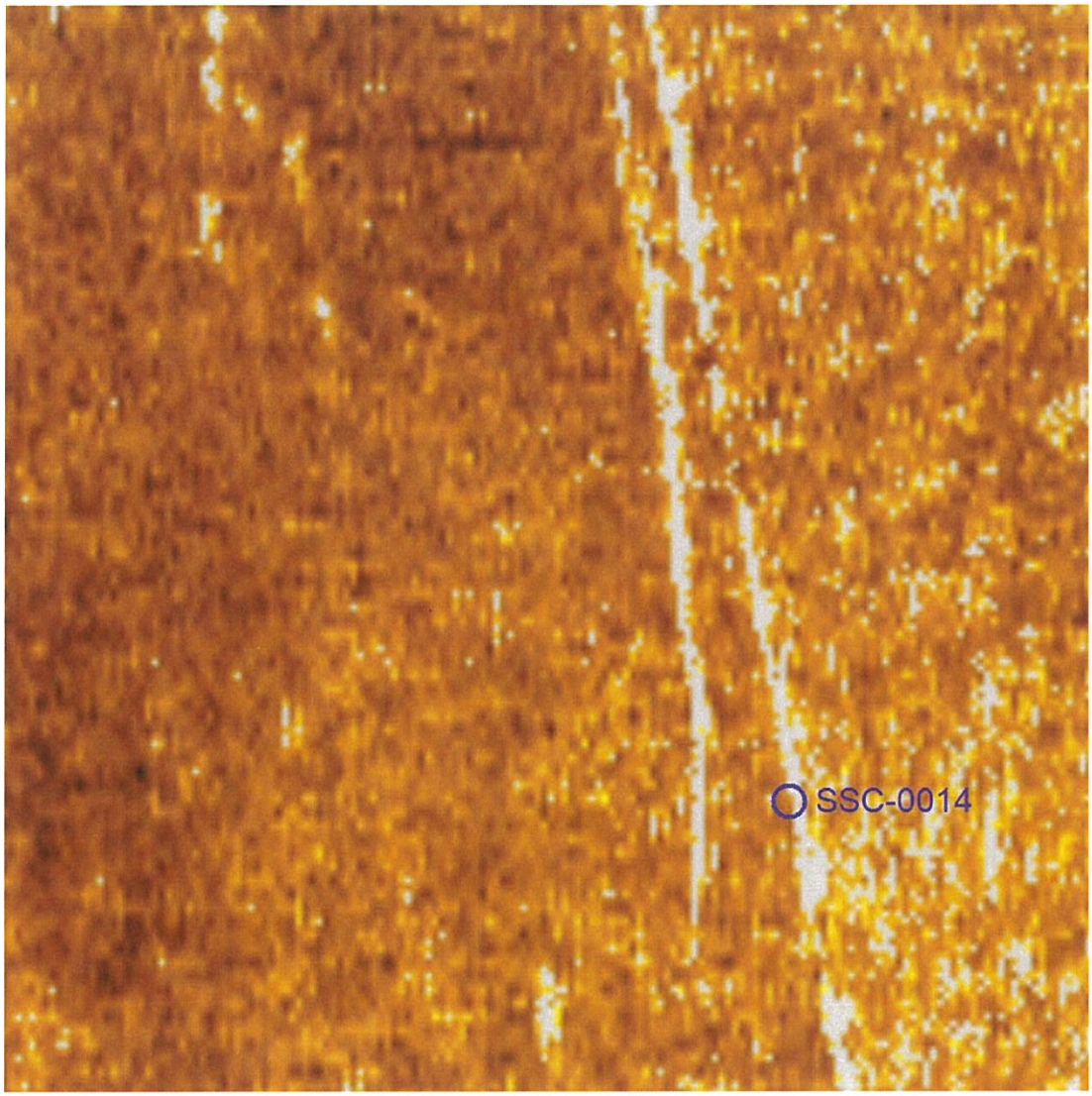
SSC-0013

- Sonar Time at Target: 9/29/2017 7:59:33 PM
- Click Position
  42.3920876614 -71.0727895806 (WGS84)
  42.3919907928 -71.0732934563 (NAD27LL)
  42.3920876614 -71.0727895806 (LocalLL)
  (X) 771571.28 (Y) 2968195.74 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 26668
- Range to target: 125.22 US ft

Dimensions and attributes

- Target Width: 4.43 US ft
- Target Height: 0.82 US ft
- Target Length: 16.04 US ft
- Target Shadow: 8.17 US ft
- Classification1: debris
- Description:

Wynn Boston Harbor Sediment Remediation Debris Survey

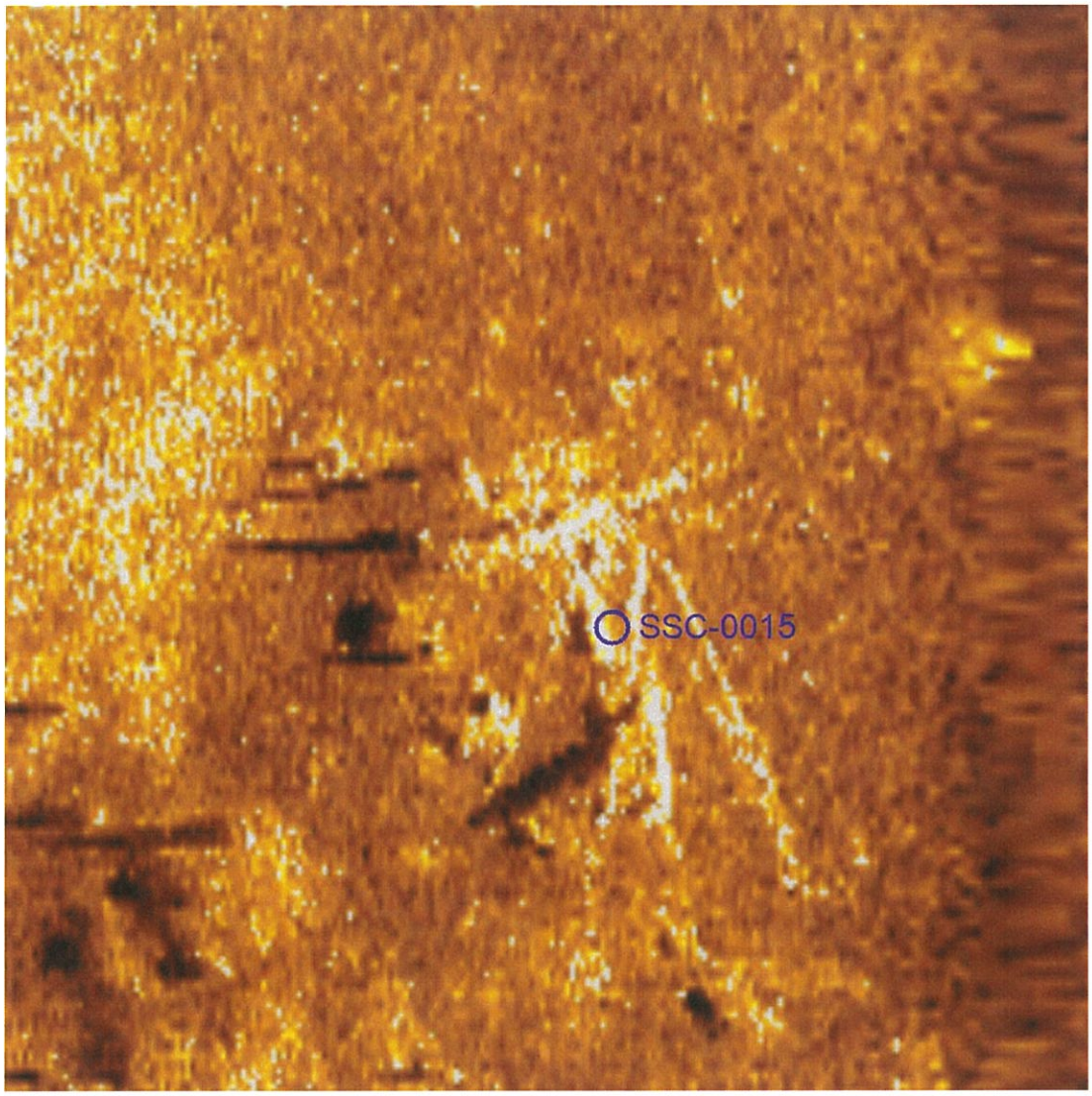


SSC-0014

- Sonar Time at Target: 9/29/2017 8:01:09 PM
- Click Position
  42.3927538946 -71.0711015312 (WGS84)
  42.3926570278 -71.0716054429 (NAD27LL)
  42.3927538946 -71.0711015312 (LocalLL)
  (X) 772026.06 (Y) 2968440.82 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 27595
- Range to target: 116.07 US ft

Dimensions and attributes

- Target Width: 1.23 US ft
- Target Height: 0.28 US ft
- Target Length: 210.89 US ft
- Target Shadow: 2.18 US ft
- Classification1: cable
- Description:

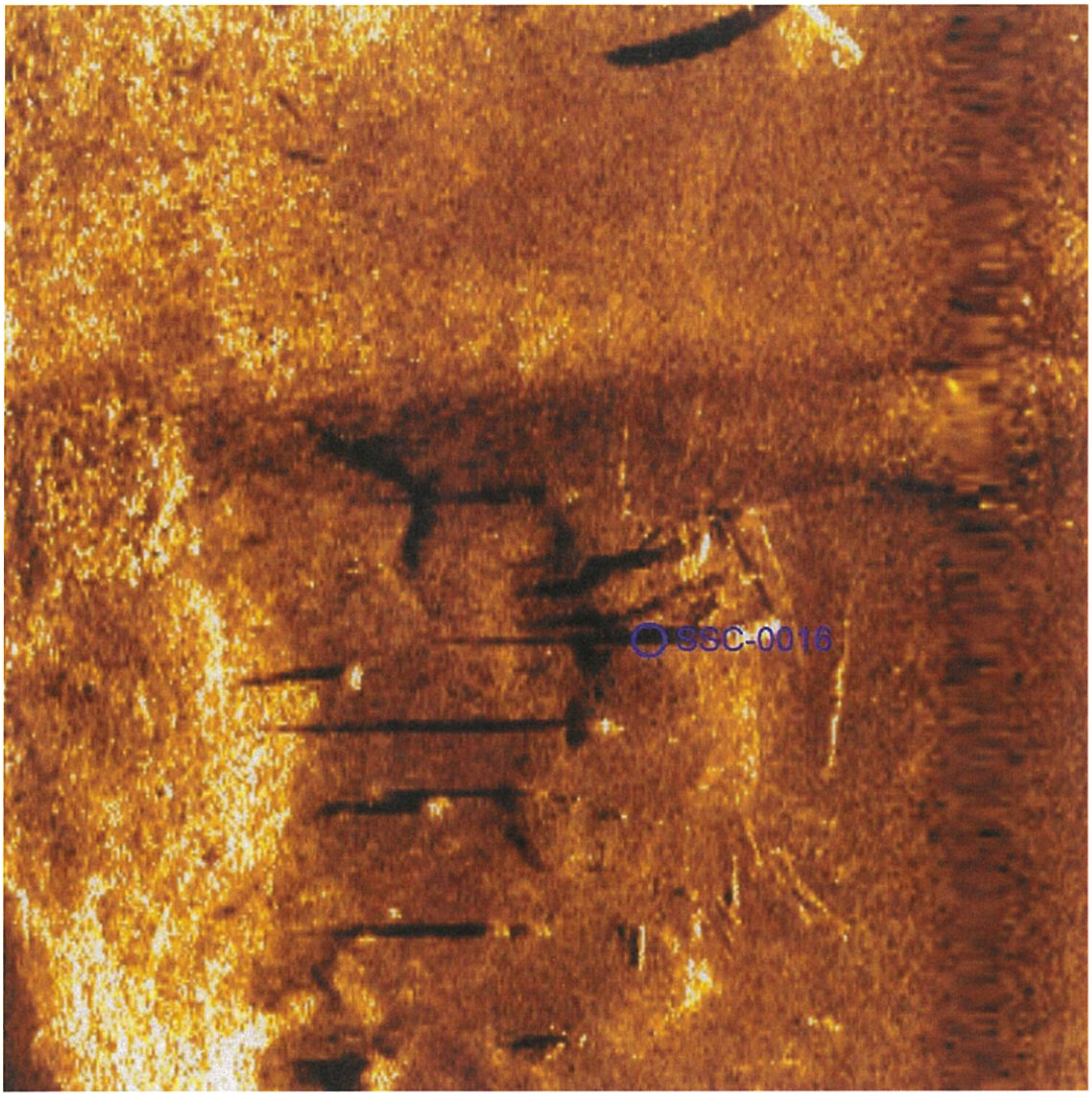


SSC-0015

- Sonar Time at Target: 9/29/2017 8:01:16 PM
- Click Position
  42.3930093763 -71.0714825679 (WGS84)
  42.3929125154 -71.0719864675 (NAD27LL)
  42.3930093763 -71.0714825679 (LocalLL)
  (X) 771922.66 (Y) 2968533.40 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 27659
- Range to target: 20.00 US ft

Dimensions and attributes

- Target Width: 16.26 US ft
- Target Height: 4.03 US ft
- Target Length: 20.75 US ft
- Target Shadow: 8.46 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

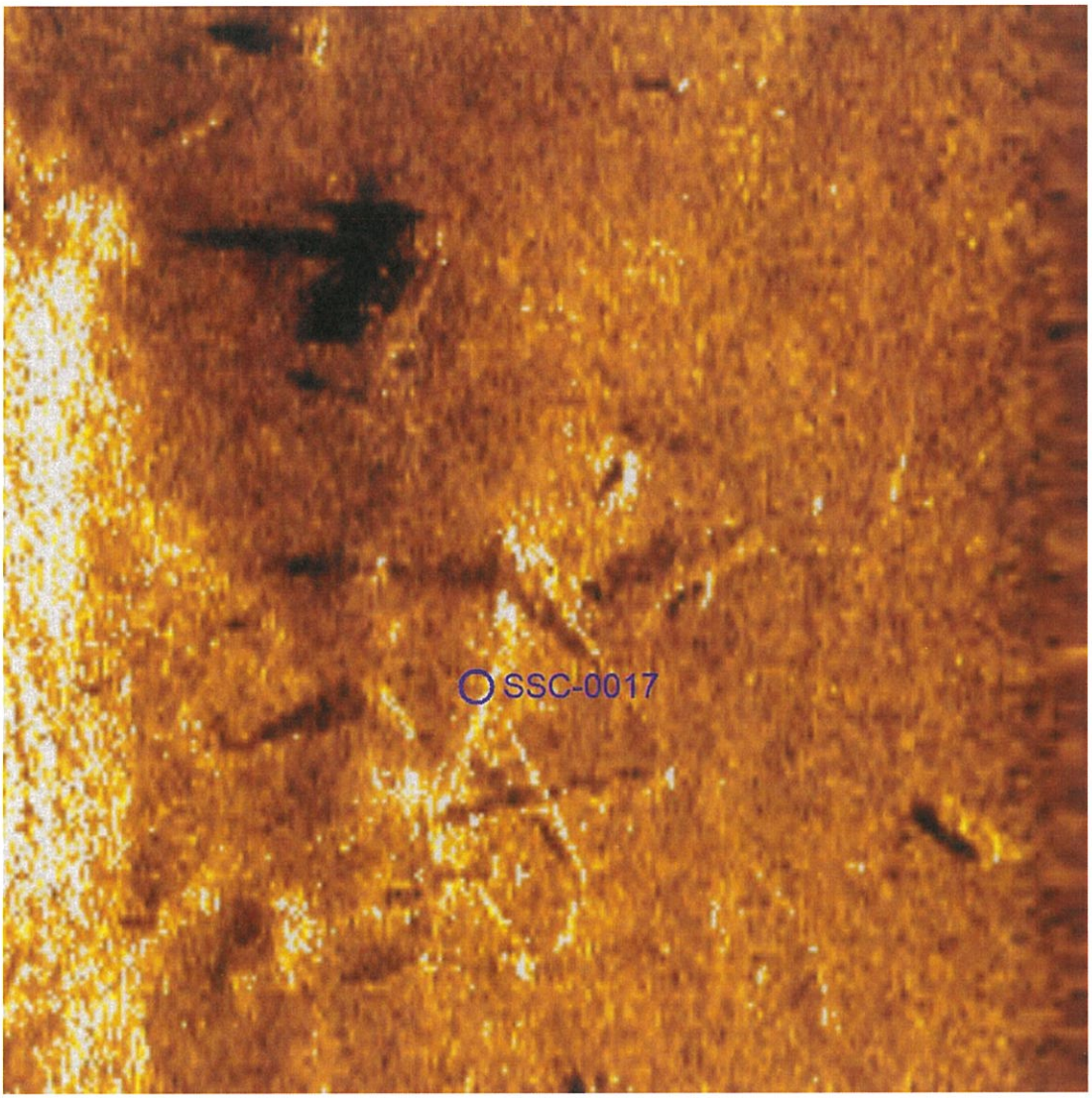


SSC-0016

- Sonar Time at Target: 9/29/2017 8:01:33 PM
- Click Position
  42.3932129229 -71.0713179358 (WGS84)
  42.3931160643 -71.0718218375 (NAD27LL)
  42.3932129229 -71.0713179358 (LocalLL)
  (X) 771966.76 (Y) 2968607.80 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 27828
- Range to target: 27.19 US ft

Dimensions and attributes

- Target Width: 25.14 US ft
- Target Height: 6.86 US ft
- Target Length: 24.88 US ft
- Target Shadow: 24.16 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin



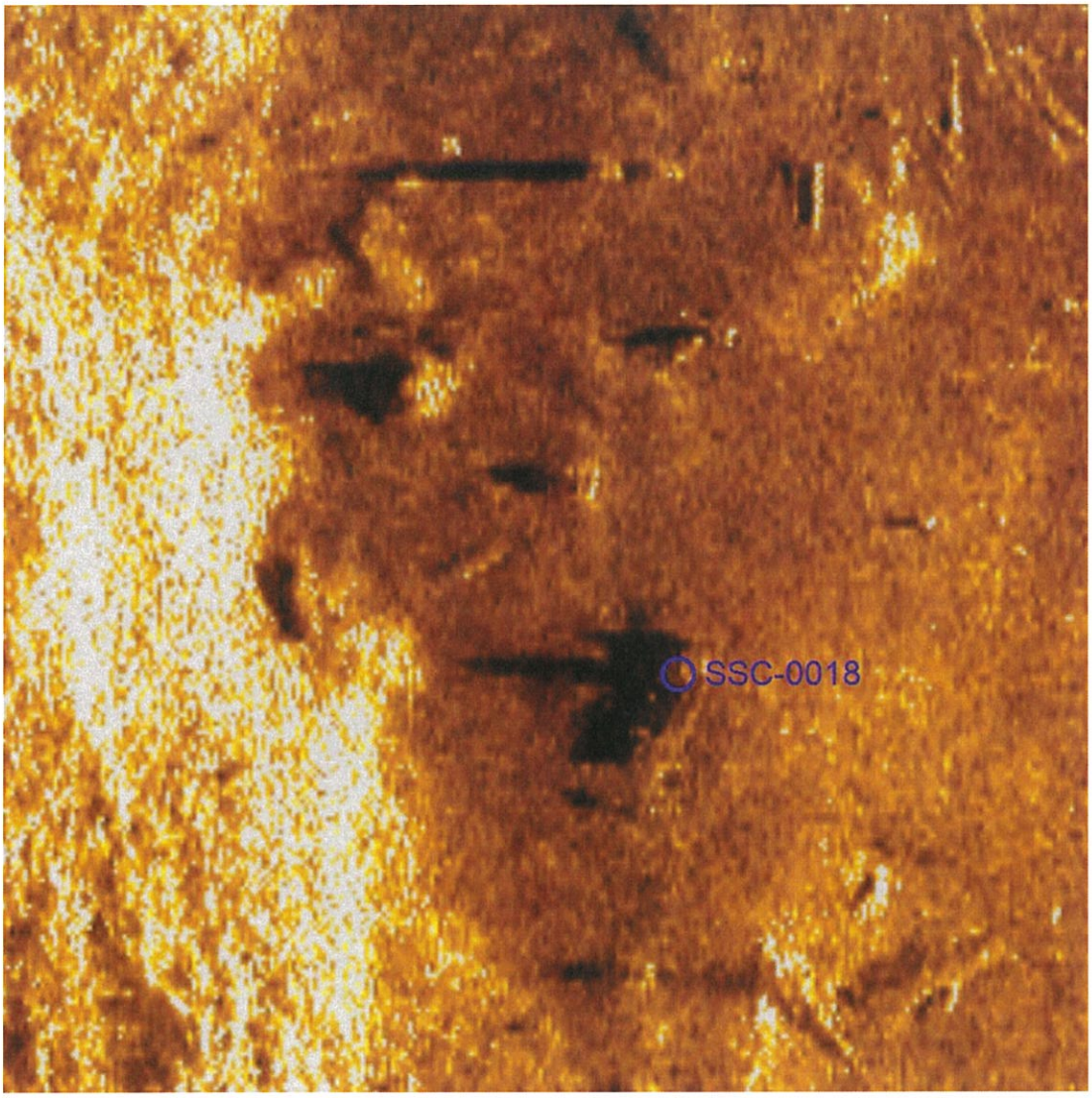
SSC-0017

- Sonar Time at Target: 9/29/2017 8:01:49 PM
- Click Position
  42.3933674687 -71.0711658251 (WGS84)
  42.3932706117 -71.0716697292 (NAD27LL)
  42.3933674687 -71.0711658251 (LocalLL)
  (X) 772007.57 (Y) 2968664.33 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 27983
- Range to target: 32.15 US ft

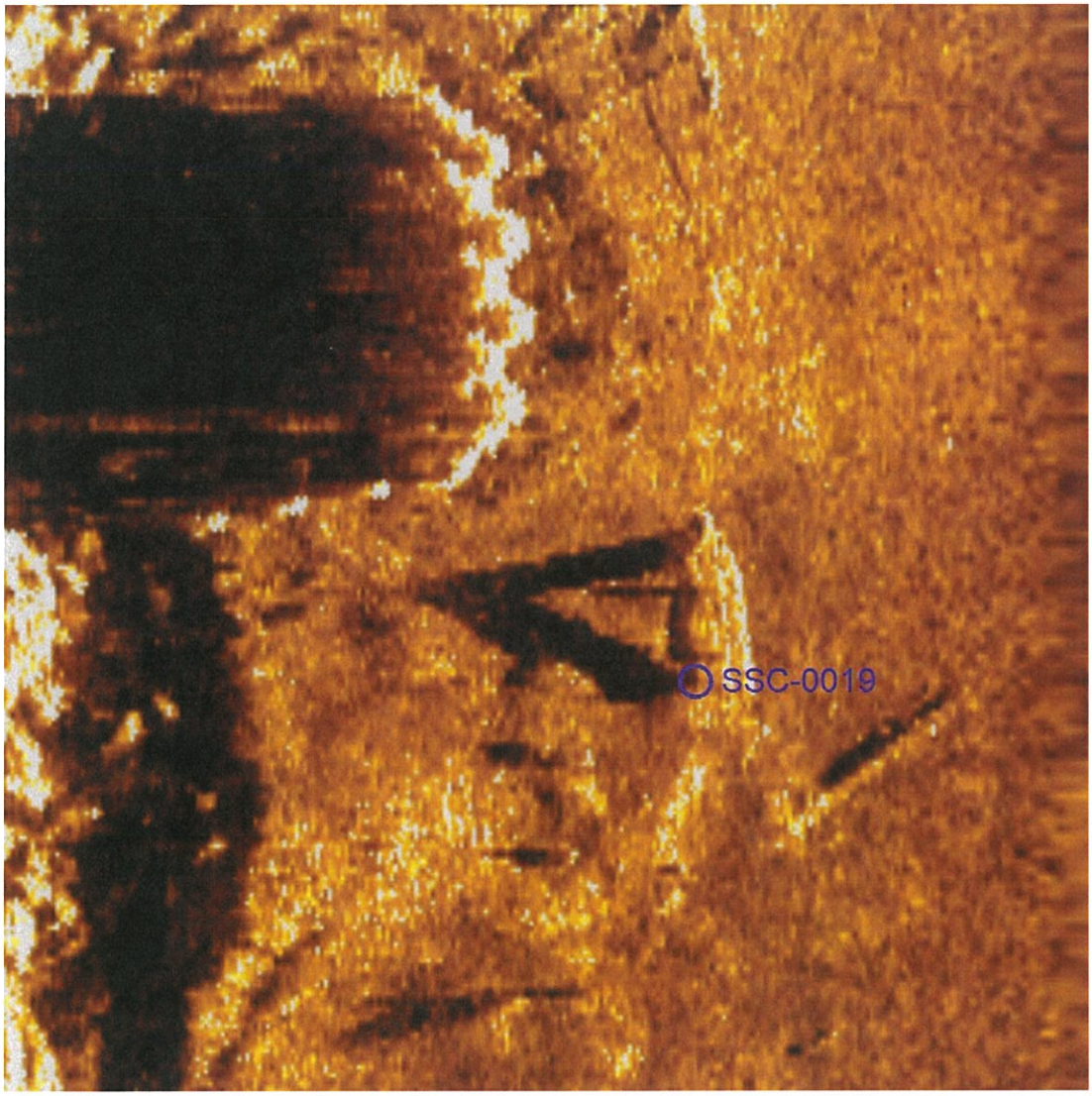
Dimensions and attributes

- Target Width: 16.10 US ft
- Target Height: 0.00 US ft
- Target Length: 19.68 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

Wynn Boston Harbor Sediment Remediation Debris Survey



SSC-0018	Dimensions and attributes
• Sonar Time at Target: 9/29/2017 8:01:44 PM • Click Position 42.3933281579 -71.0712180901 (WGS84) 42.3932313006 -71.0717219932 (NAD27LL) 42.3933281579 -71.0712180901 (LocalLL) (X) 771993.52 (Y) 2968649.93 (Projected Coordinates) • Map Projection: MA83F • Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf • Ping Number: 27936 • Range to target: 35.55 US ft	• Target Width: 3.04 US ft • Target Height: 2.84 US ft • Target Length: 8.14 US ft • Target Shadow: 9.39 US ft • Classification1: debris • Description:

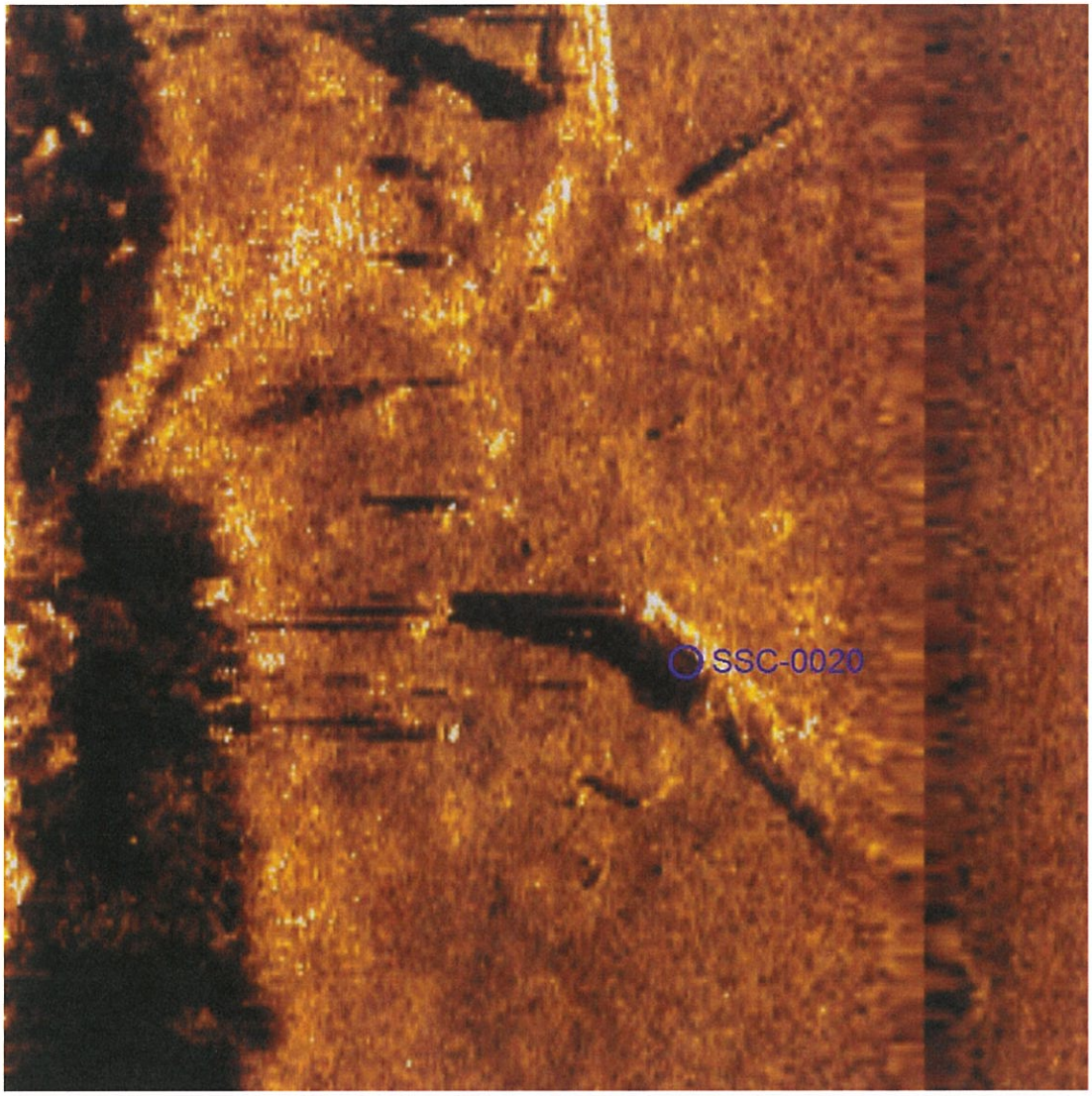


SSC-0019

- Sonar Time at Target: 9/29/2017 8:02:09 PM
- Click Position
  42.3935630371 -71.0709795340 (WGS84)
  42.3934661821 -71.0714834408 (NAD27LL)
  42.3935630371 -71.0709795340 (LocalLL)
  (X) 772057.53 (Y) 2968735.85 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28172
- Range to target: 22.87 US ft

Dimensions and attributes

- Target Width: 4.11 US ft
- Target Height: 4.70 US ft
- Target Length: 10.28 US ft
- Target Shadow: 14.75 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

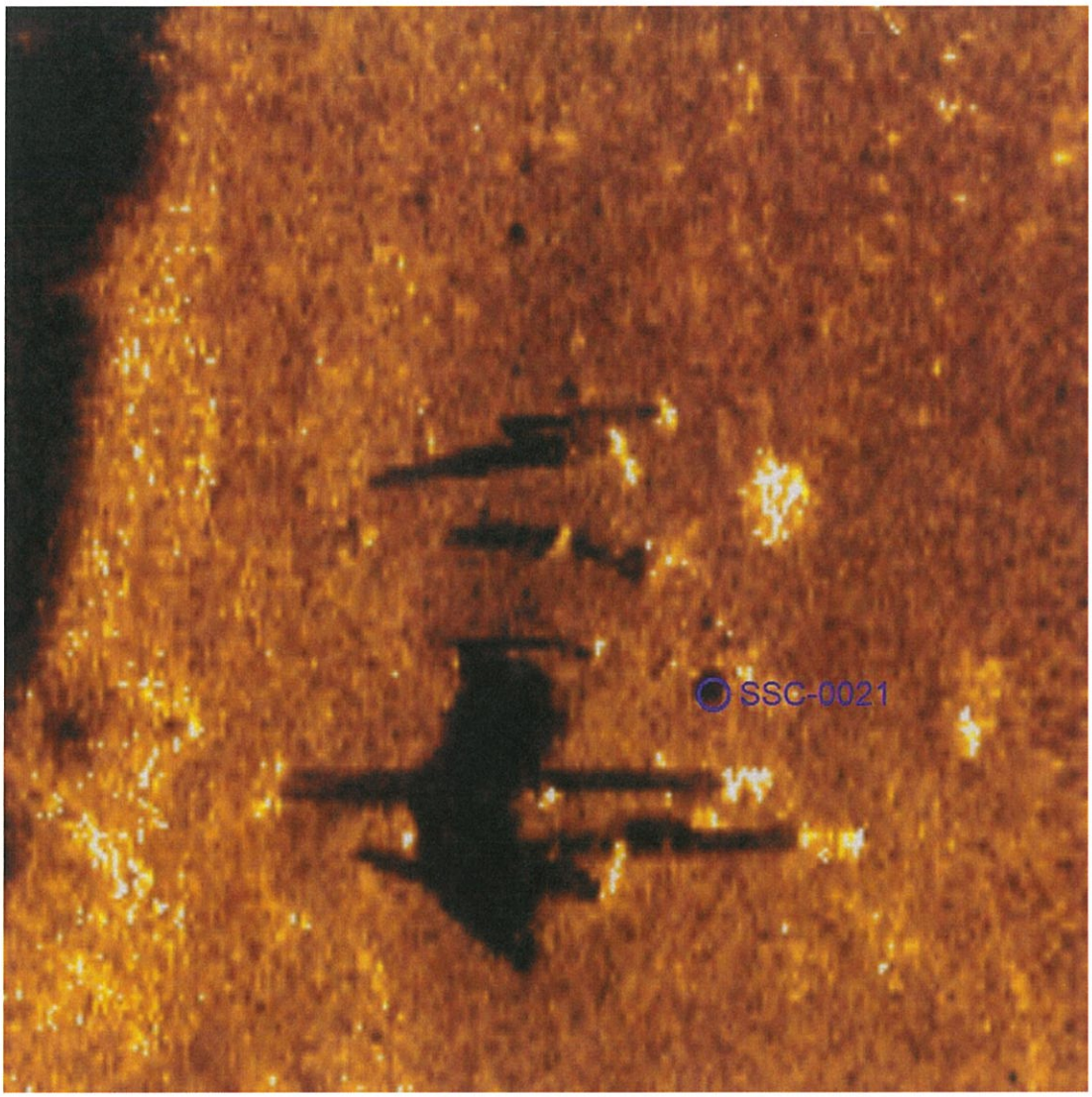


SSC-0020

- Sonar Time at Target: 9/29/2017 8:02:17 PM
- Click Position
  42.3936454339 -71.0708894091 (WGS84)
  42.3935485798 -71.0713933174 (NAD27LL)
  42.3936454339 -71.0708894091 (LocalLL)
  (X) 772081.73 (Y) 2968766.00 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28248
- Range to target: 15.03 US ft

Dimensions and attributes

- Target Width: 1.71 US ft
- Target Height: 5.68 US ft
- Target Length: 10.97 US ft
- Target Shadow: 15.26 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

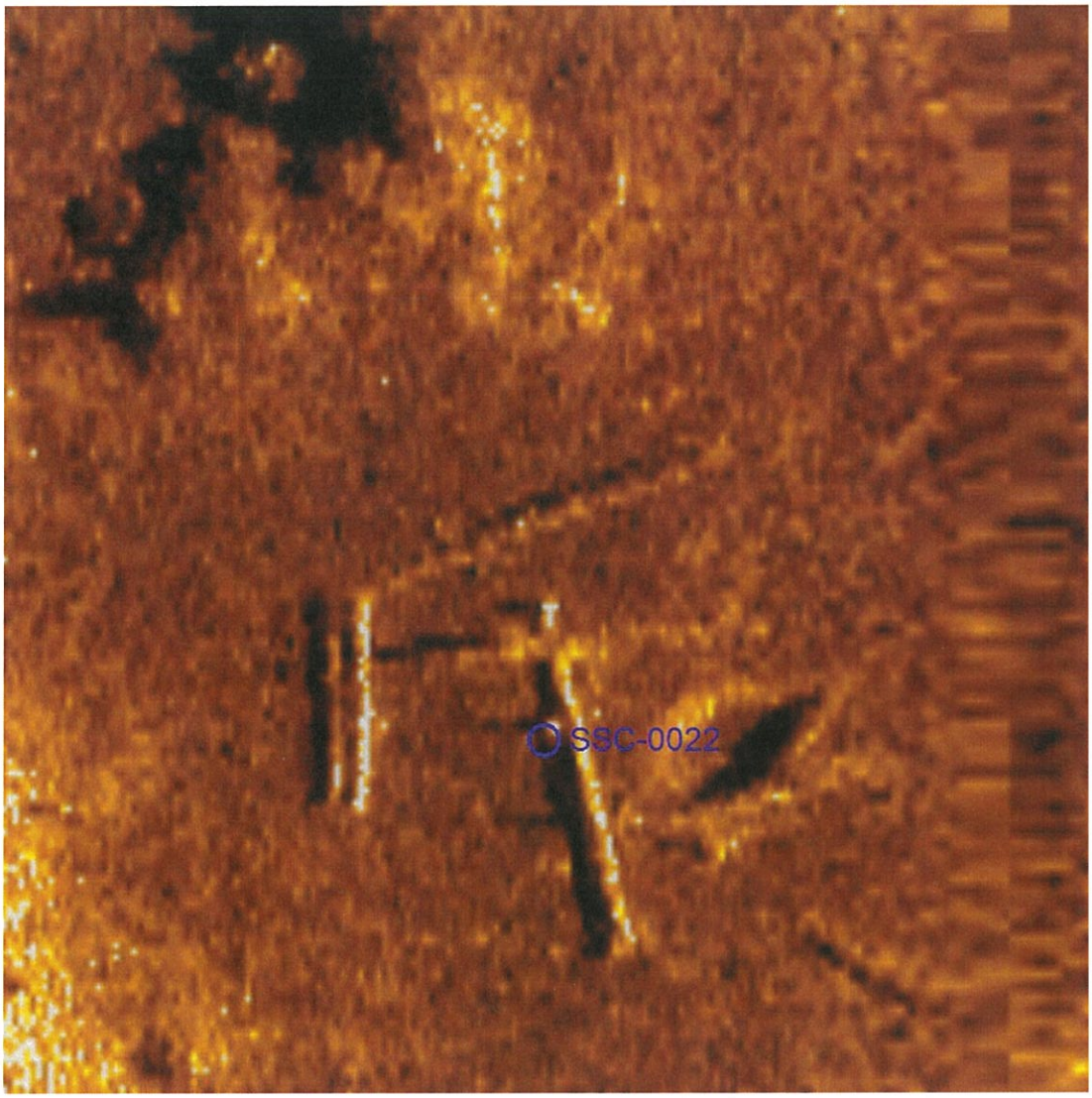


SSC-0021

- Sonar Time at Target: 9/29/2017 8:02:34 PM
- Click Position
  42.3938253369 -71.0707232469 (WGS84)
  42.3937284847 -71.0712271575 (NAD27LL)
  42.3938253369 -71.0707232469 (LocalLL)
  (X) 772126.28 (Y) 2968831.79 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28408
- Range to target: 21.96 US ft

Dimensions and attributes

- Target Width: 15.02 US ft
- Target Height: 5.58 US ft
- Target Length: 21.84 US ft
- Target Shadow: 19.01 US ft
- Classification1: piling
- Description: Debris associated with demolished dolphin

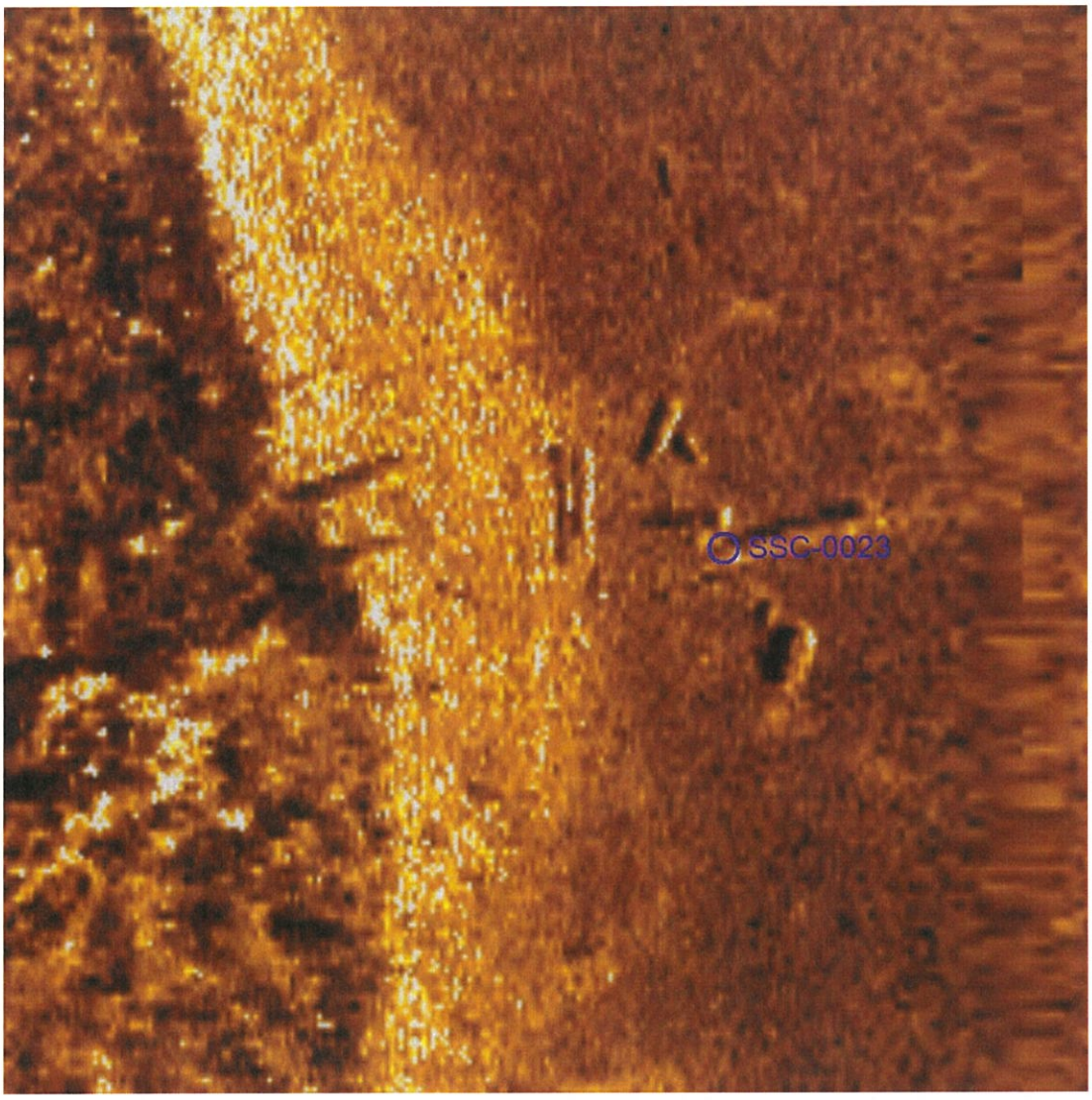


SSC-0022

- Sonar Time at Target: 9/29/2017 8:02:59 PM
- Click Position
  42.3940613018 -71.0704801377 (WGS84)
  42.3939644520 -71.0709840521 (NAD27LL)
  42.3940613018 -71.0704801377 (LocalLL)
  (X) 772191.52 (Y) 2968918.11 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28653
- Range to target: 18.17 US ft

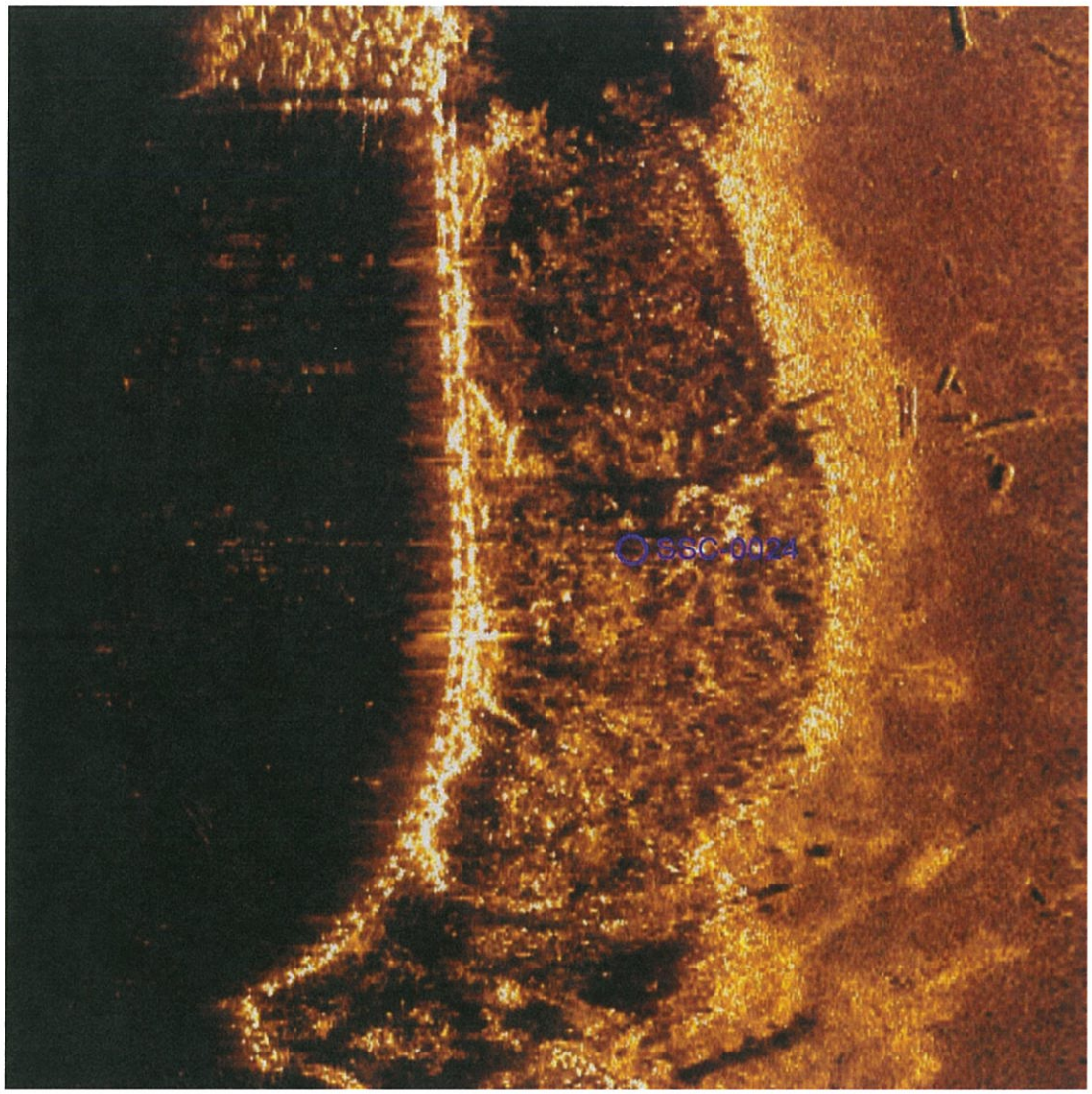
Dimensions and attributes

- Target Width: 0.73 US ft
- Target Height: 1.00 US ft
- Target Length: 15.02 US ft
- Target Shadow: 1.86 US ft
- Classification1: piling
- Description: Debris associated with demolished dolphin



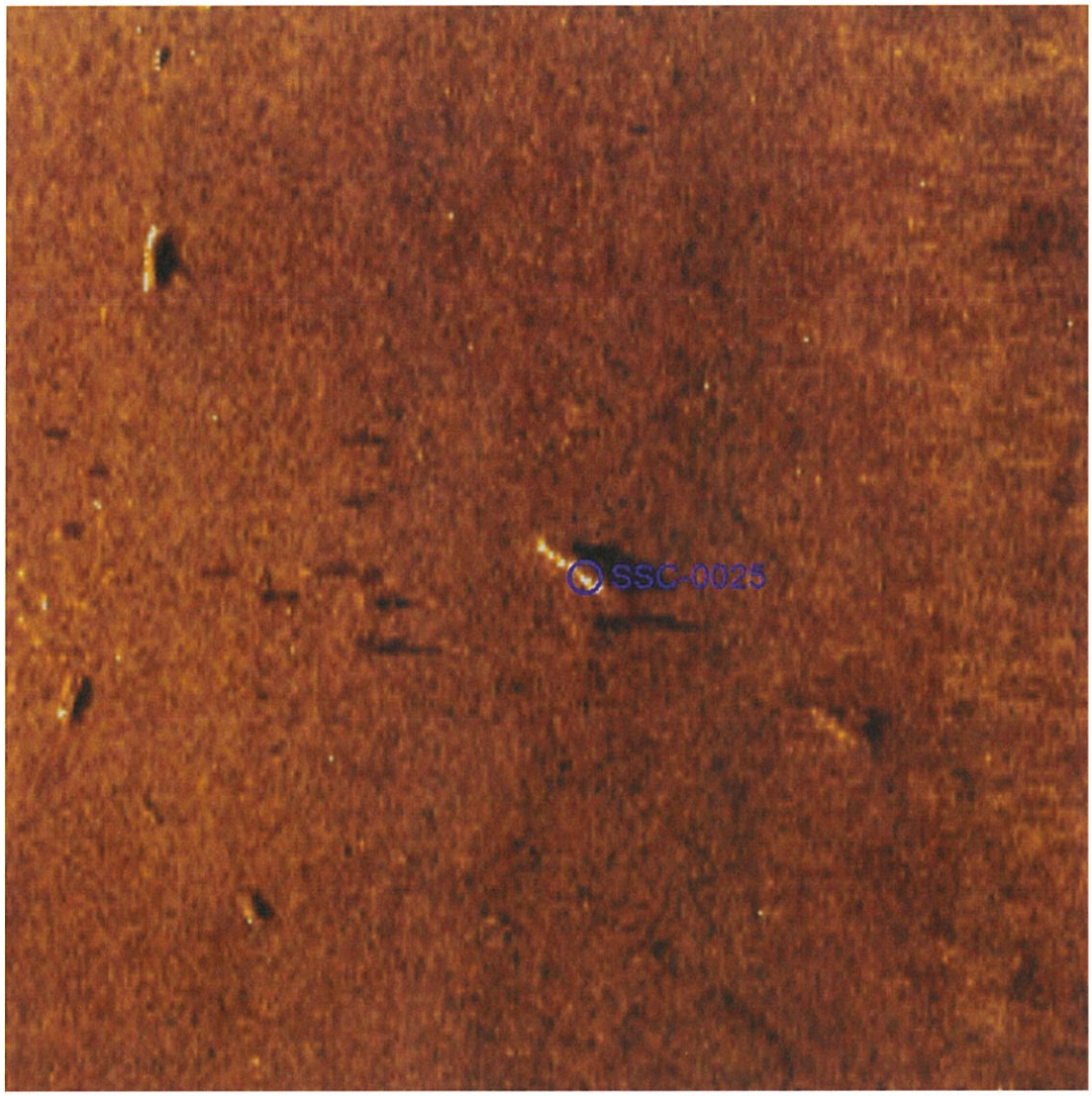
SSC-0023	Dimensions and attributes
• Sonar Time at Target: 9/29/2017 8:03:11 PM • Click Position 42.3941877073 -71.0703689750 (WGS84) 42.3940908589 -71.0708728910 (NAD27LL) 42.3941877073 -71.0703689750 (LocalLL) (X) 772221.31 (Y) 2968964.33 (Projected Coordinates) • Map Projection: MA83F • Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf • Ping Number: 28767 • Range to target: 14.38 US ft	• Target Width: 2.39 US ft • Target Height: 0.00 US ft • Target Length: 12.19 US ft • Target Shadow: 0.00 US ft • Classification1: piling • Description:

Wynn Boston Harbor Sediment Remediation Debris Survey



SSC-0024	Dimensions and attributes
• Sonar Time at Target: 9/29/2017 8:03:14 PM • Click Position 42.3942839503 -71.0704490500 (WGS84) 42.3941871038 -71.0709529630 (NAD27LL) 42.3942839503 -71.0704490500 (LocalLL) (X) 772199.51 (Y) 2968999.29 (Projected Coordinates) • Map Projection: MA83F • Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf • Ping Number: 28797 • Range to target: 52.15 US ft	• Target Width: 36.60 US ft • Target Height: 0.00 US ft • Target Length: 80.41 US ft • Target Shadow: 0.00 US ft • Classification1: gravel • Description:

Wynn Boston Harbor Sediment Remediation Debris Survey

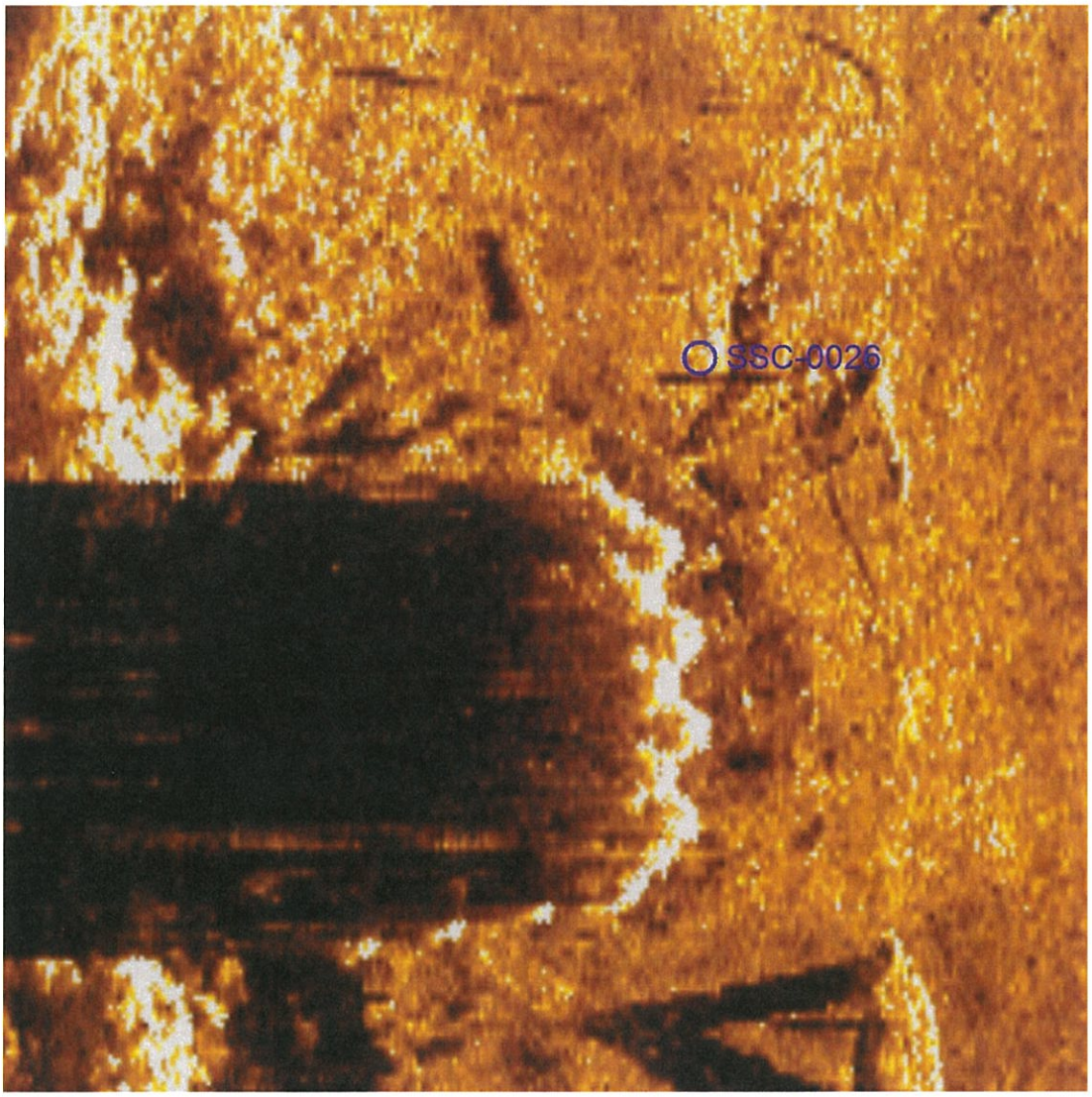


SSC-0025

- Sonar Time at Target: 9/29/2017 8:02:02 PM
- Click Position
  42.3933864313 -71.0707690511 (WGS84)
  42.3932895725 -71.0712729649 (NAD27LL)
  42.3933864313 -71.0707690511 (LocalLL)
  (X) 772114.71 (Y) 2968671.78 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28107
- Range to target: 56.73 US ft

Dimensions and attributes

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 7.82 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:



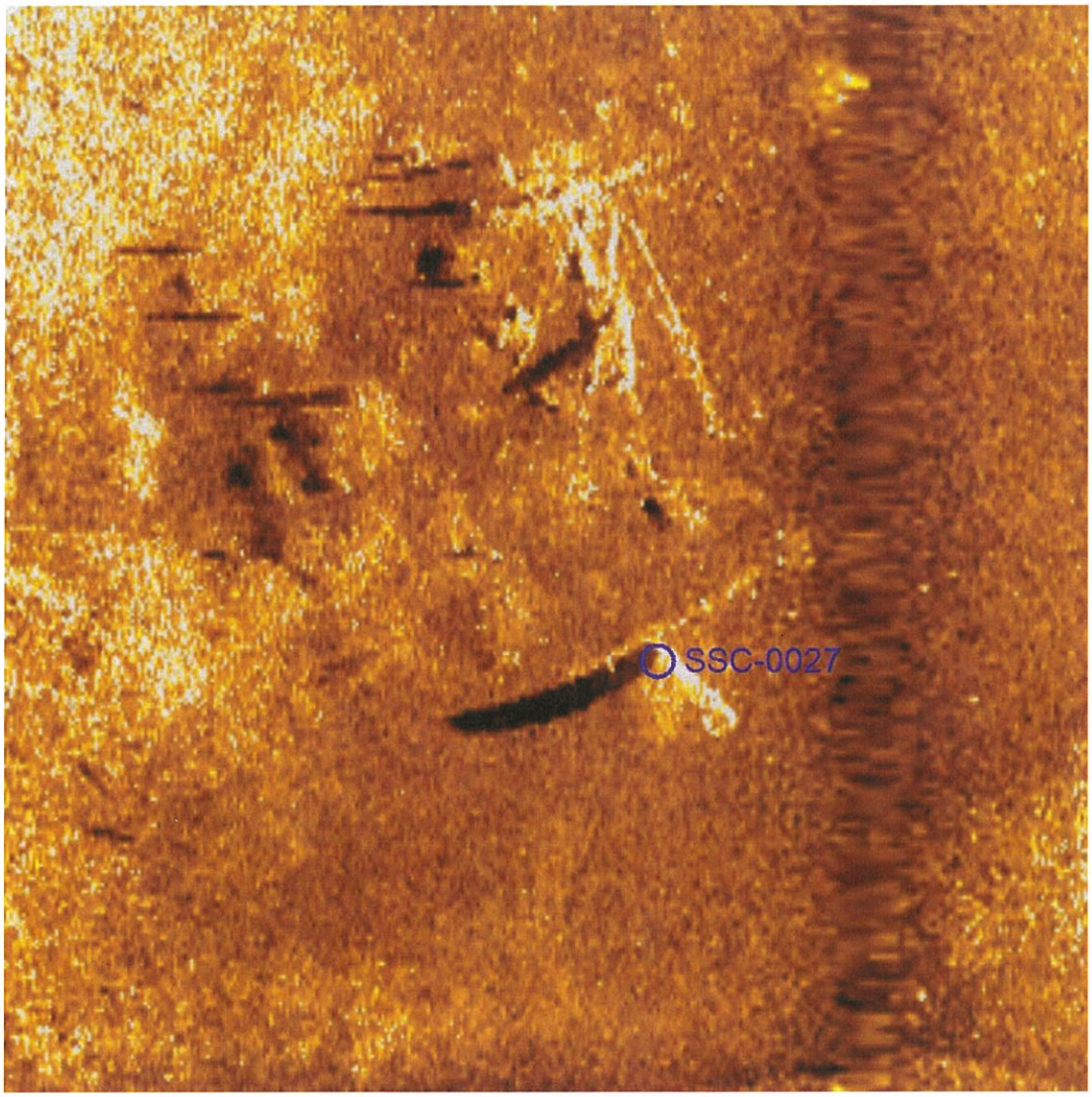
SSC-0026

- Sonar Time at Target: 9/29/2017 8:02:00 PM
- Click Position
  42.3934808741 -71.0710766284 (WGS84)
  42.3933840184 -71.0715805336 (NAD27LL)
  42.3934808741 -71.0710766284 (LocalLL)
  (X) 772031.45 (Y) 2968705.78 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28087
- Range to target: 32.68 US ft

Dimensions and attributes

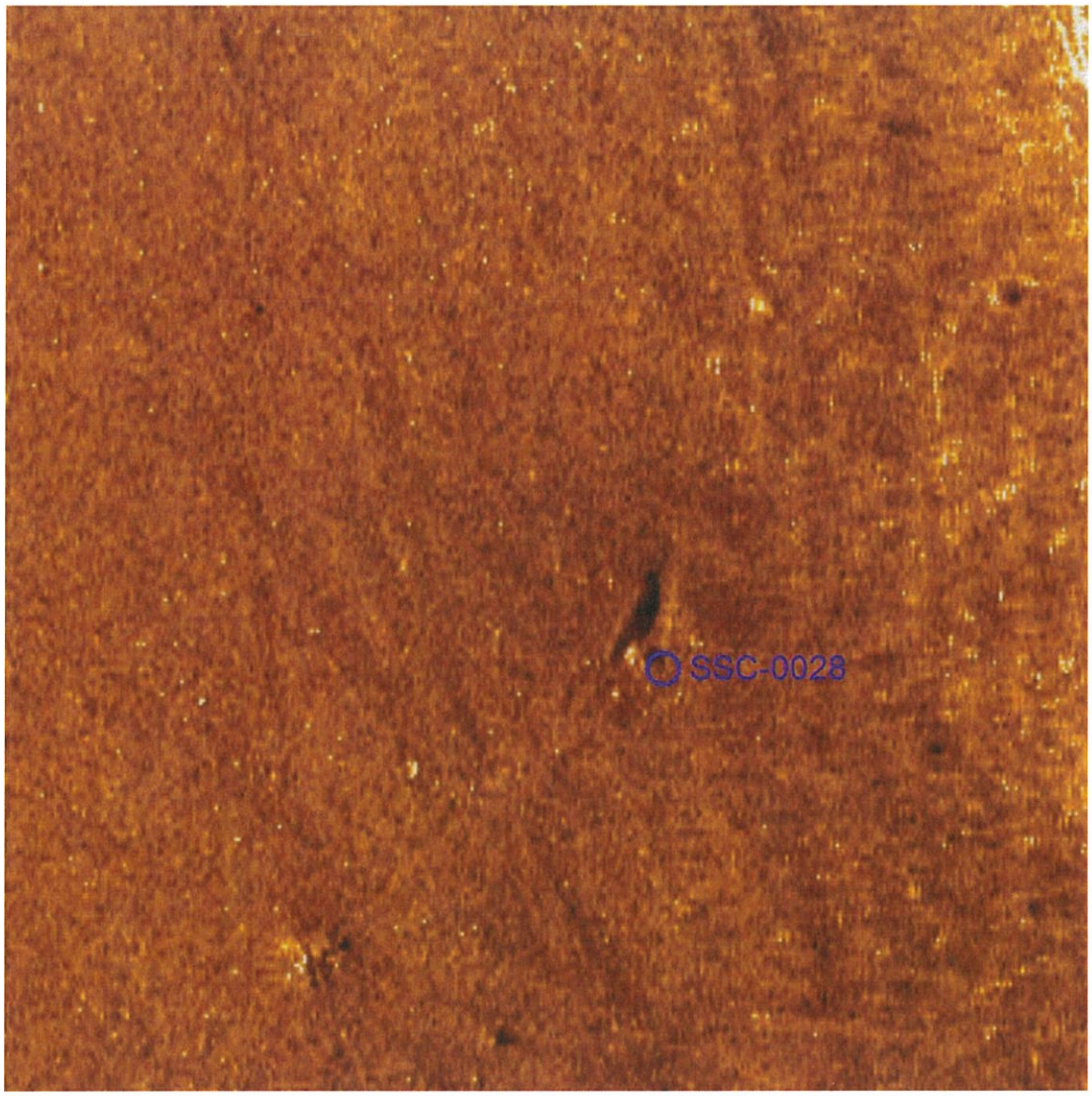
- Target Width: 5.55 US ft
- Target Height: 0.00 US ft
- Target Length: 11.94 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

Wynn Boston Harbor Sediment Remediation Debris Survey

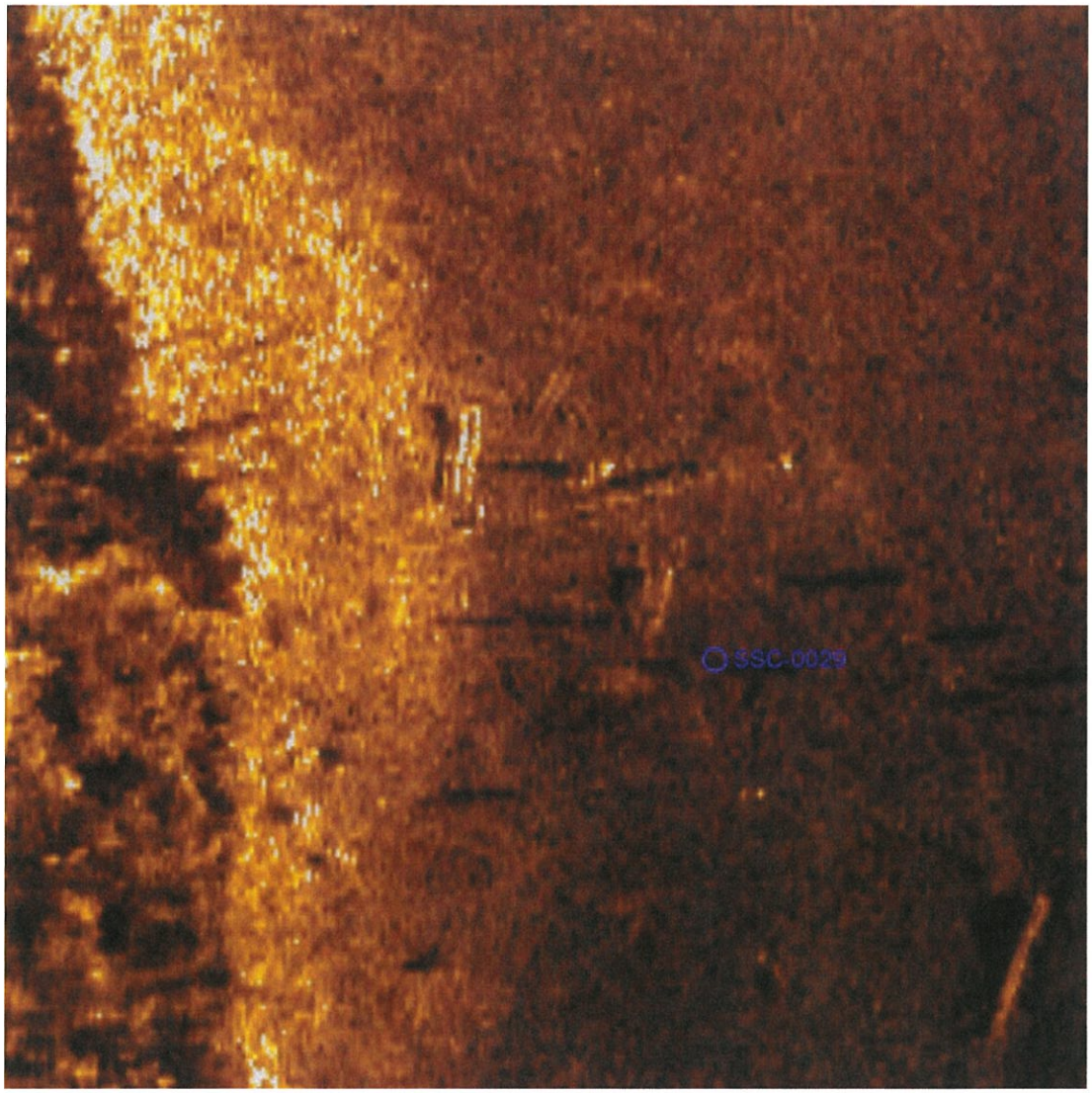


SSC-0027	Dimensions and attributes
• Sonar Time at Target: 9/29/2017 8:01:22 PM • Click Position 42.3930724354 -71.0714049055 (WGS84) 42.3929755751 -71.0719088064 (NAD27LL) 42.3930724354 -71.0714049055 (LocalLL) (X) 771943.53 (Y) 2968556.49 (Projected Coordinates) • Map Projection: MA83F • Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf • Ping Number: 27720 • Range to target: 15.42 US ft	• Target Width: 0.00 US ft • Target Height: 6.45 US ft • Target Length: 0.00 US ft • Target Shadow: 15.22 US ft • Classification1: piling • Description:

Wynn Boston Harbor Sediment Remediation Debris Survey



SSC-0028	Dimensions and attributes
• Sonar Time at Target: 9/29/2017 8:12:28 PM • Click Position 42.3930318795 -71.0709459781 (WGS84) 42.3929350162 -71.0714498910 (NAD27LL) 42.3930318795 -71.0709459781 (LocalLL) (X) 772067.57 (Y) 2968542.33 (Projected Coordinates) • Map Projection: MA83F • Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf • Ping Number: 34127 • Range to target: 74.24 US ft	• Target Width: 2.93 US ft • Target Height: 0.00 US ft • Target Length: 8.65 US ft • Target Shadow: 0.00 US ft • Classification1: piling • Description:

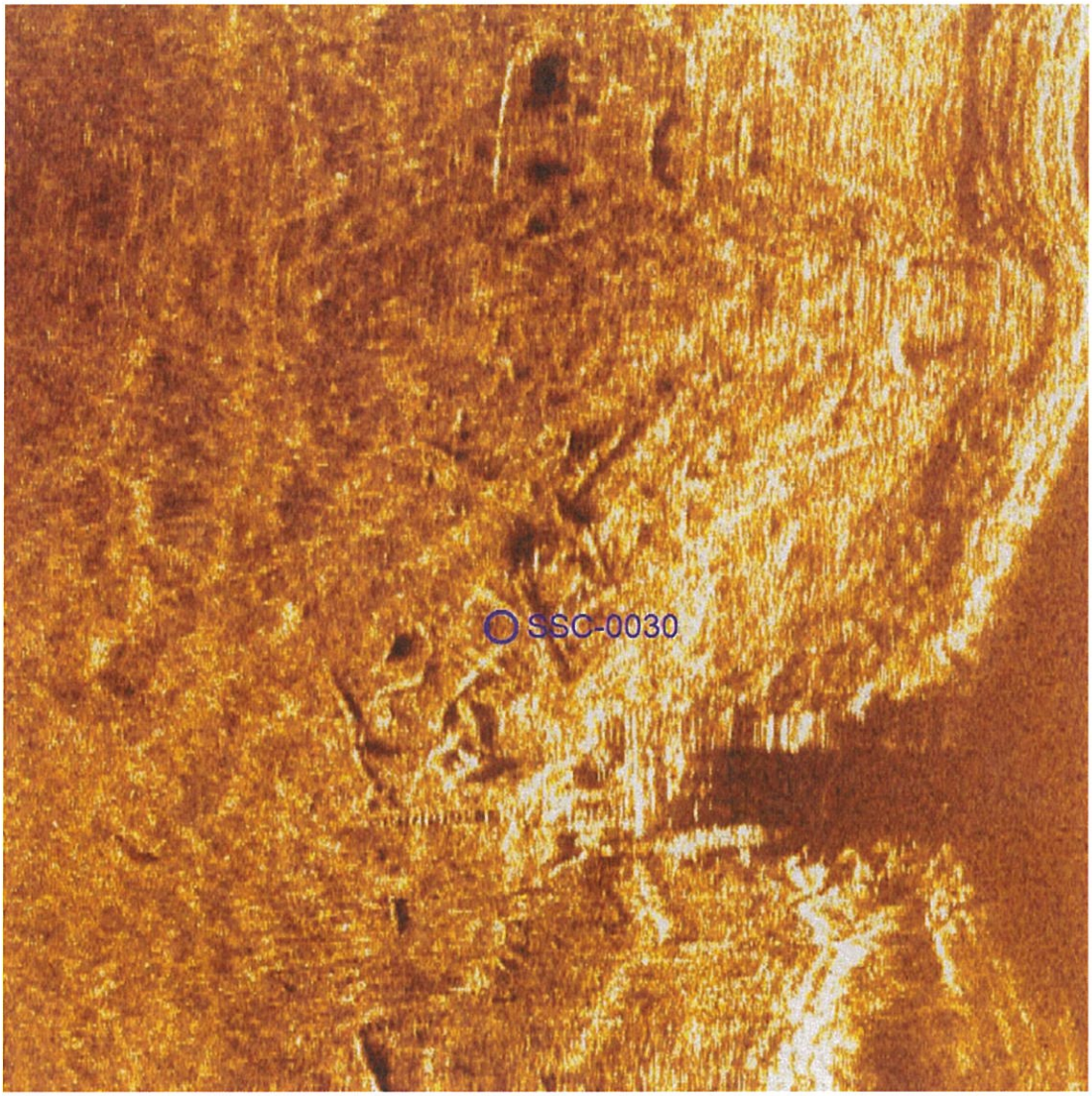


SSC-0029

- Sonar Time at Target: 9/29/2017 8:14:05 PM
- Click Position
  42.3941924598 -71.0703502614 (WGS84)
  42.3940956114 -71.0708541778 (NAD27LL)
  42.3941924598 -71.0703502614 (LocalLL)
  (X) 772226.36 (Y) 2968966.08 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 35058
- Range to target: 32.94 US ft

Dimensions and attributes

- Target Width: 6.15 US ft
- Target Height: 0.00 US ft
- Target Length: 15.82 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description:

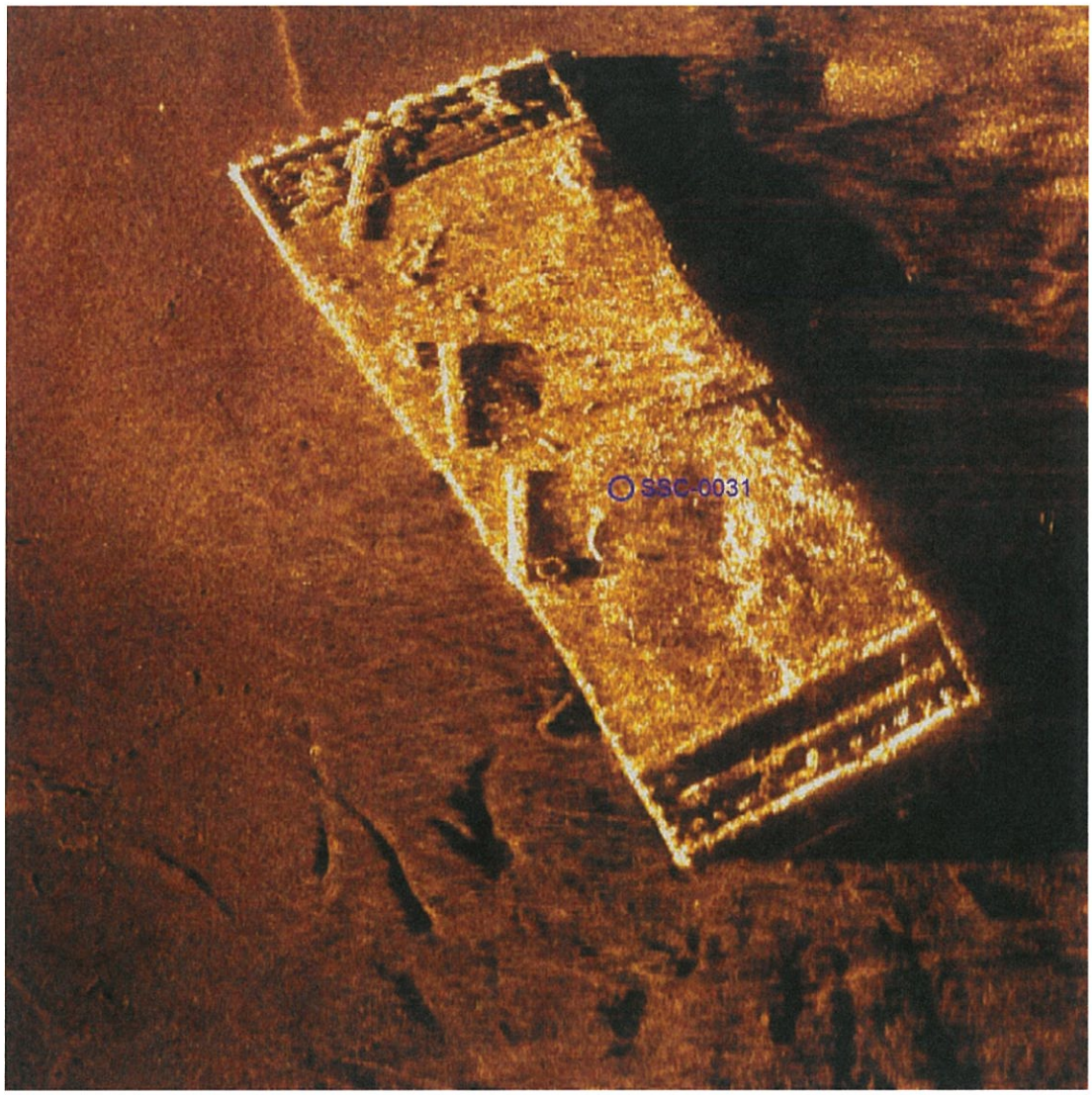


SSC-0030

- Sonar Time at Target: 9/29/2017 8:10:55 PM
- Click Position
  42.3919265041 -71.0716065846 (WGS84)
  42.3918296271 -71.0721104918 (NAD27LL)
  42.3919265041 -71.0716065846 (LocalLL)
  (X) 771891.14 (Y) 2968138.61 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 33233
- Range to target: 150.58 US ft

Dimensions and attributes

- Target Width: 18.72 US ft
- Target Height: 0.00 US ft
- Target Length: 24.92 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description:

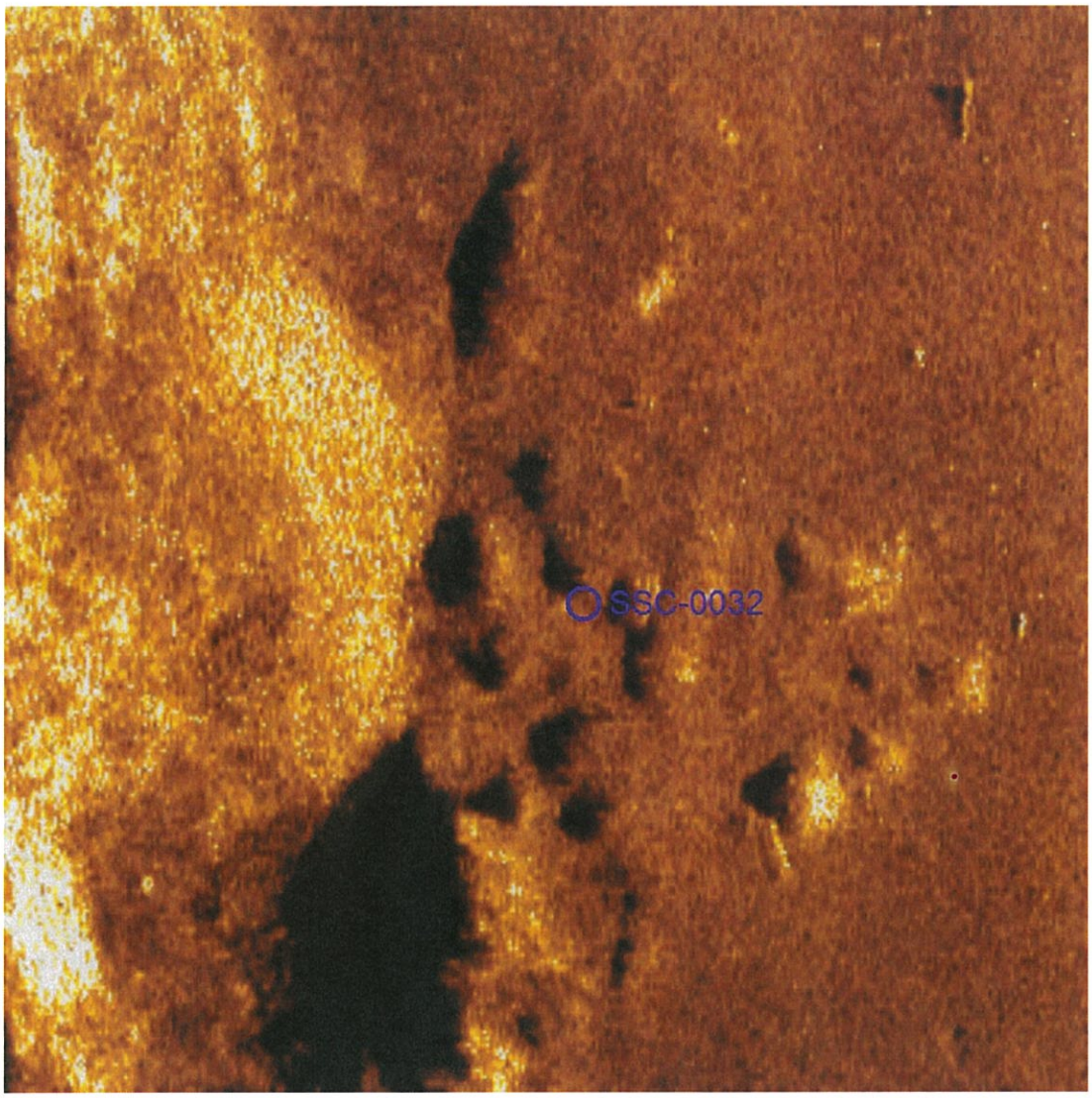


SSC-0031

- Sonar Time at Target: 9/29/2017 8:14:01 PM
- Click Position
  42.3939832628 -71.0699942558 (WGS84)
  42.3938864094 -71.0704981833 (NAD27LL)
  42.3939832628 -71.0699942558 (LocalLL)
  (X) 772322.91 (Y) 2968890.33 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 35021
- Range to target: 88.62 US ft

Dimensions and attributes

- Target Width: 39.15 US ft
- Target Height: 2.87 US ft
- Target Length: 96.21 US ft
- Target Shadow: 25.12 US ft
- Classification1: wreck
- Description:

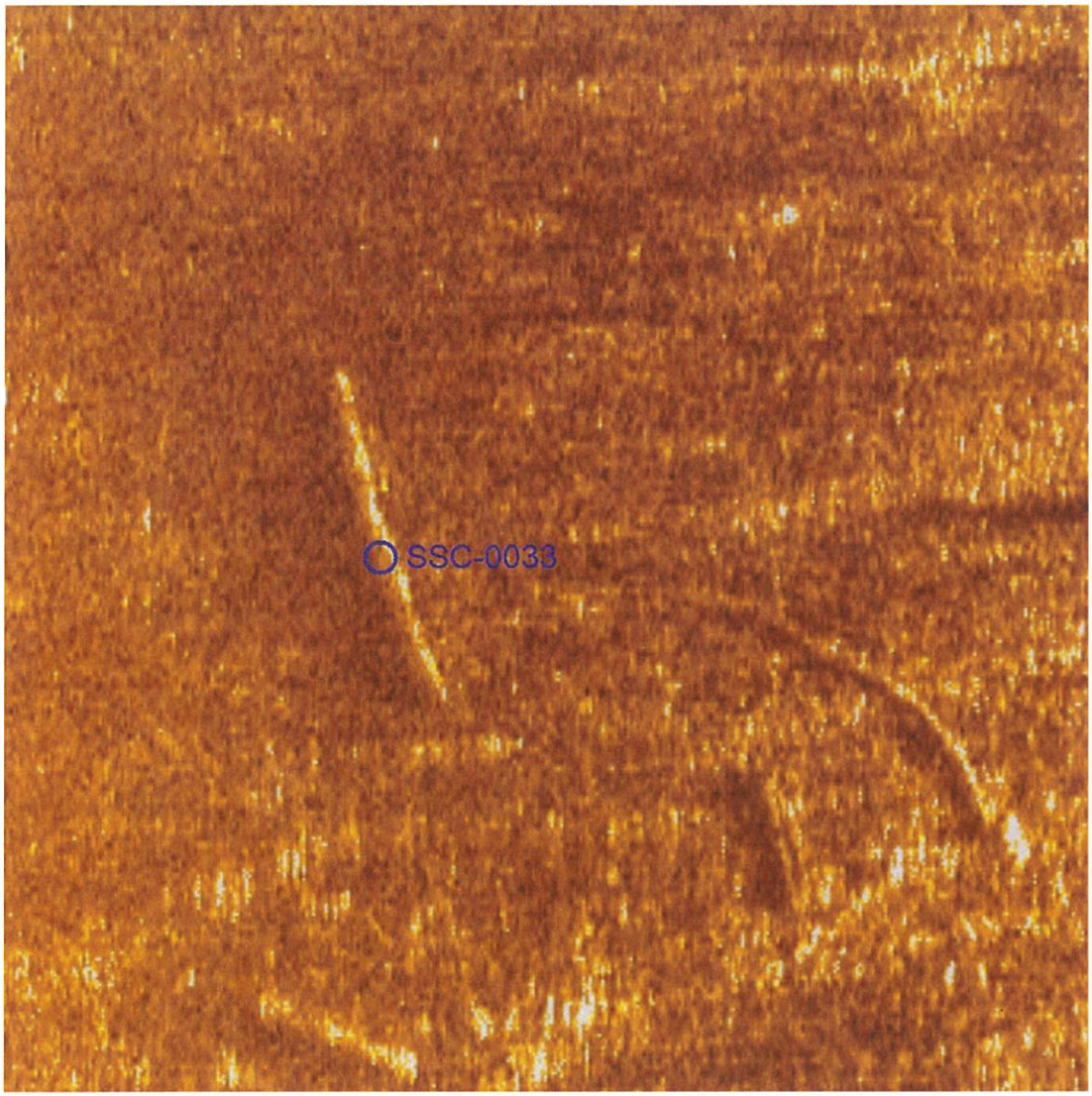


SSC-0032

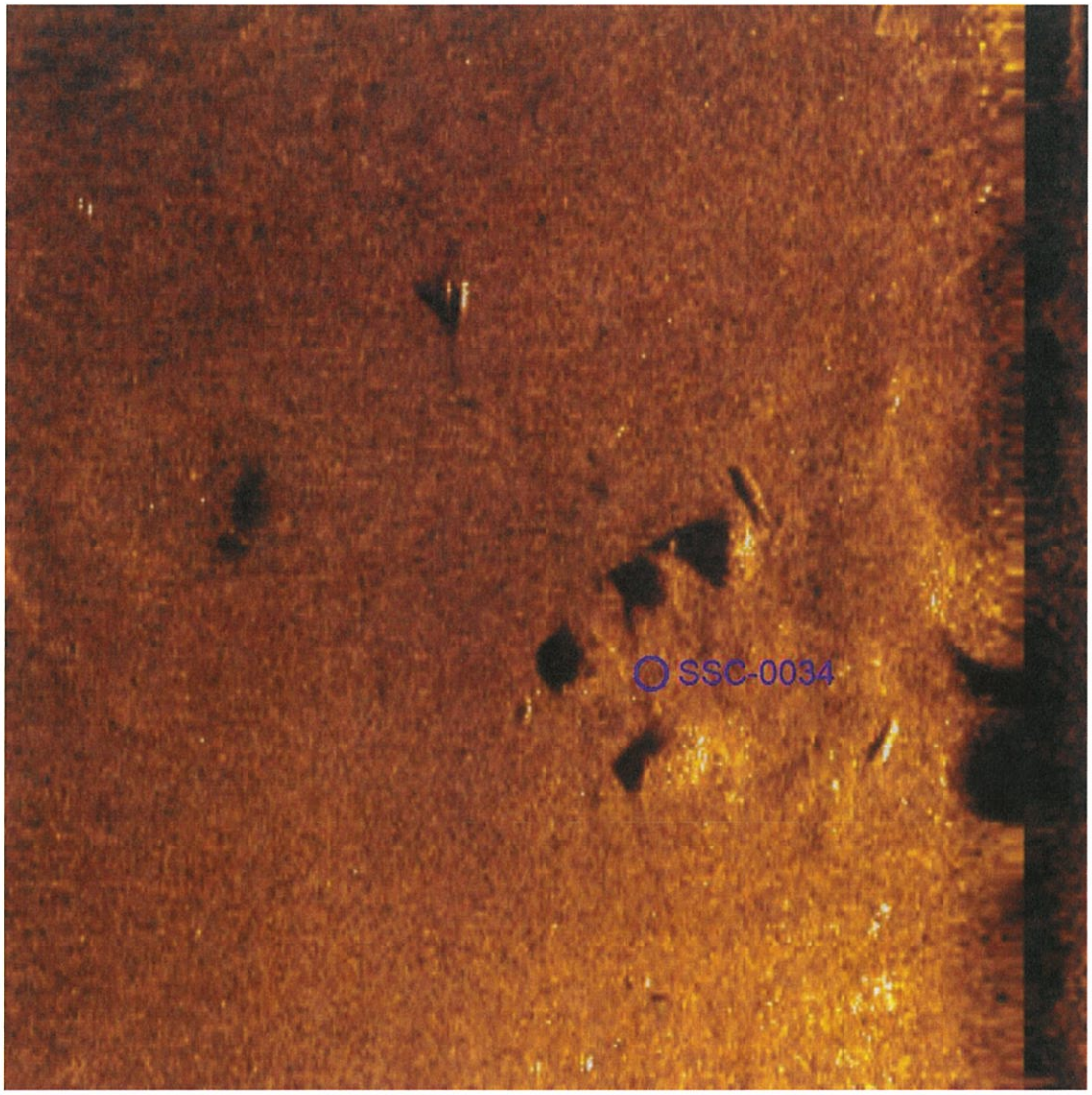
- Sonar Time at Target: 9/29/2017 8:26:25 PM
- Click Position
  42.3939275729 -71.0705861138 (WGS84)
  42.3938307216 -71.0710900269 (NAD27LL)
  42.3939275729 -71.0705861138 (LocalLL)
  (X) 772163.14 (Y) 2968869.23 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929202250.jsf
- Ping Number: 42178
- Range to target: 74.11 US ft

Dimensions and attributes

- Target Width: 23.17 US ft
- Target Height: 0.68 US ft
- Target Length: 31.65 US ft
- Target Shadow: 4.06 US ft
- Classification1: boulders
- Description: Debris associated with demolished dolphin



SSC-0033	Dimensions and attributes
• Sonar Time at Target: 9/29/2017 8:33:02 PM • Click Position 42.3911314589 -71.0716188499 (WGS84) 42.3910345696 -71.0721227647 (NAD27LL) 42.3911314589 -71.0716188499 (LocalLL) (X) 771889.29 (Y) 2967848.86 (Projected Coordinates) • Map Projection: MA83F • Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929202828.jsf • Ping Number: 45995 • Range to target: 195.67 US ft	• Target Width: 2.60 US ft • Target Height: 0.31 US ft • Target Length: 26.01 US ft • Target Shadow: 4.42 US ft • Classification1: piling • Description:

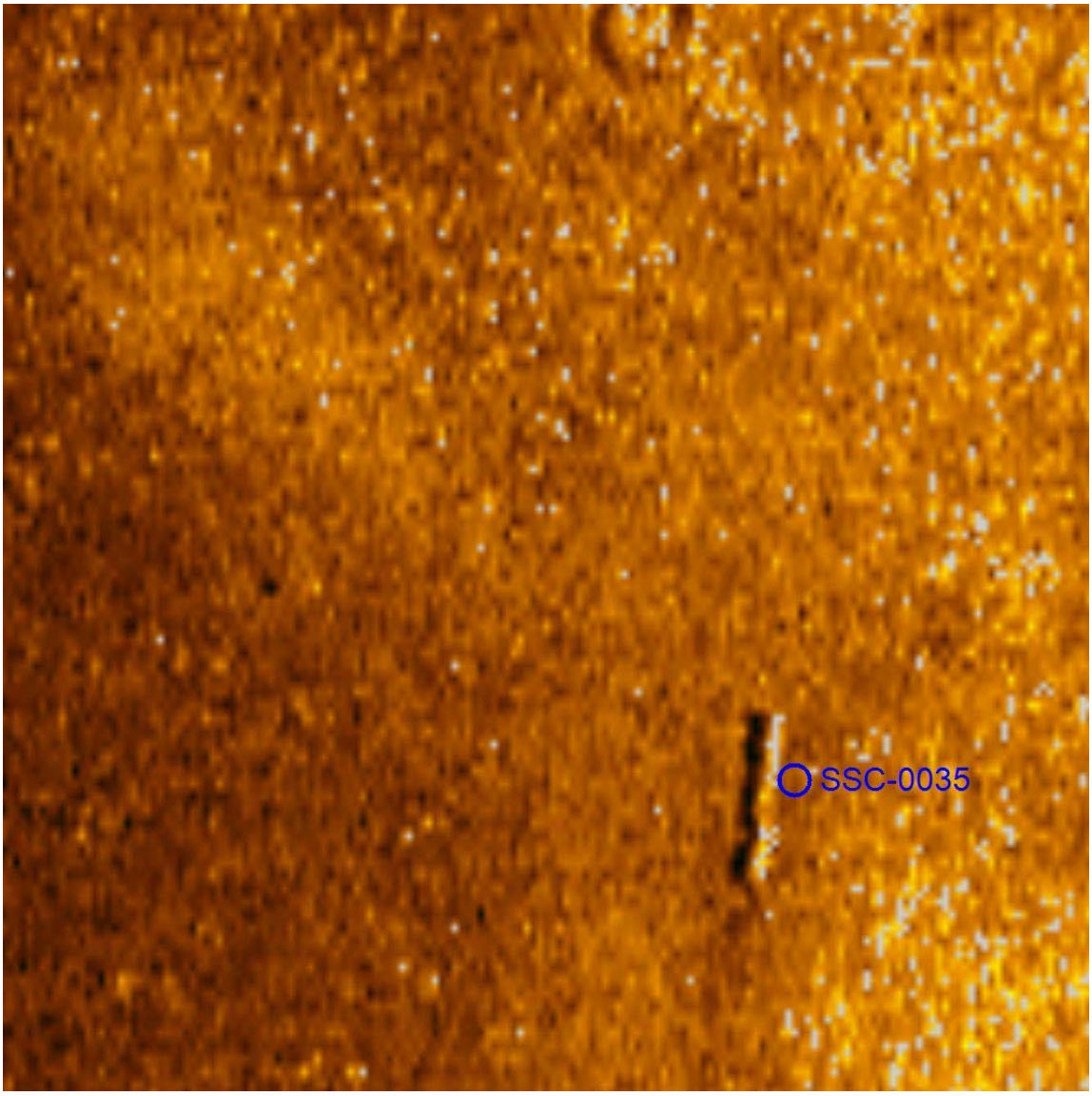


SSC-0034

- Sonar Time at Target: 9/29/2017 8:44:22 PM
- Click Position
  42.3938868395 -71.0705173347 (WGS84)
  42.3937899873 -71.0710212499 (NAD27LL)
  42.3938868395 -71.0705173347 (LocalLL)
  (X) 772181.79 (Y) 2968854.48 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204329.jsf
- Ping Number: 52534
- Range to target: 30.06 US ft

Dimensions and attributes

- Target Width: 12.37 US ft
- Target Height: 1.12 US ft
- Target Length: 18.75 US ft
- Target Shadow: 6.05 US ft
- Classification1: boulders
- Description:



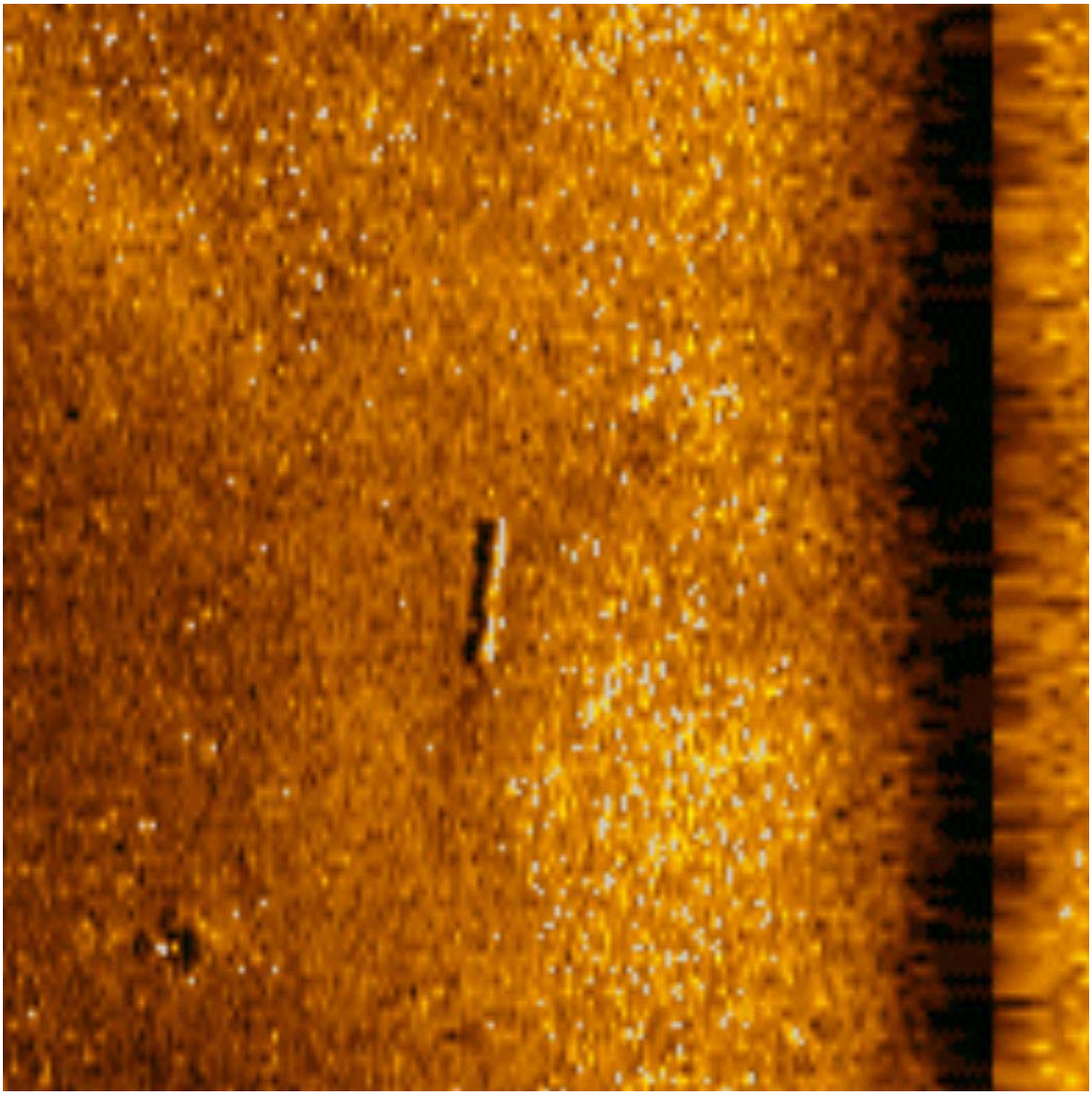
SSC-0035

- Sonar Time at Target: 9/29/2017 8:52:42 PM
- Click Position
  42.3924848961 -71.0736158890 (WGS84)
  42.3923880379 -71.0741197399 (NAD27LL)
  42.3924848961 -71.0736158890 (LocalLL)
  (X) 771347.35 (Y) 2968339.38 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205115.jsf
- Ping Number: 57346
- Range to target: 19.74 US ft

Dimensions and attributes

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 6.95 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:

Wynn Boston Harbor Sediment Remediation Debris Survey

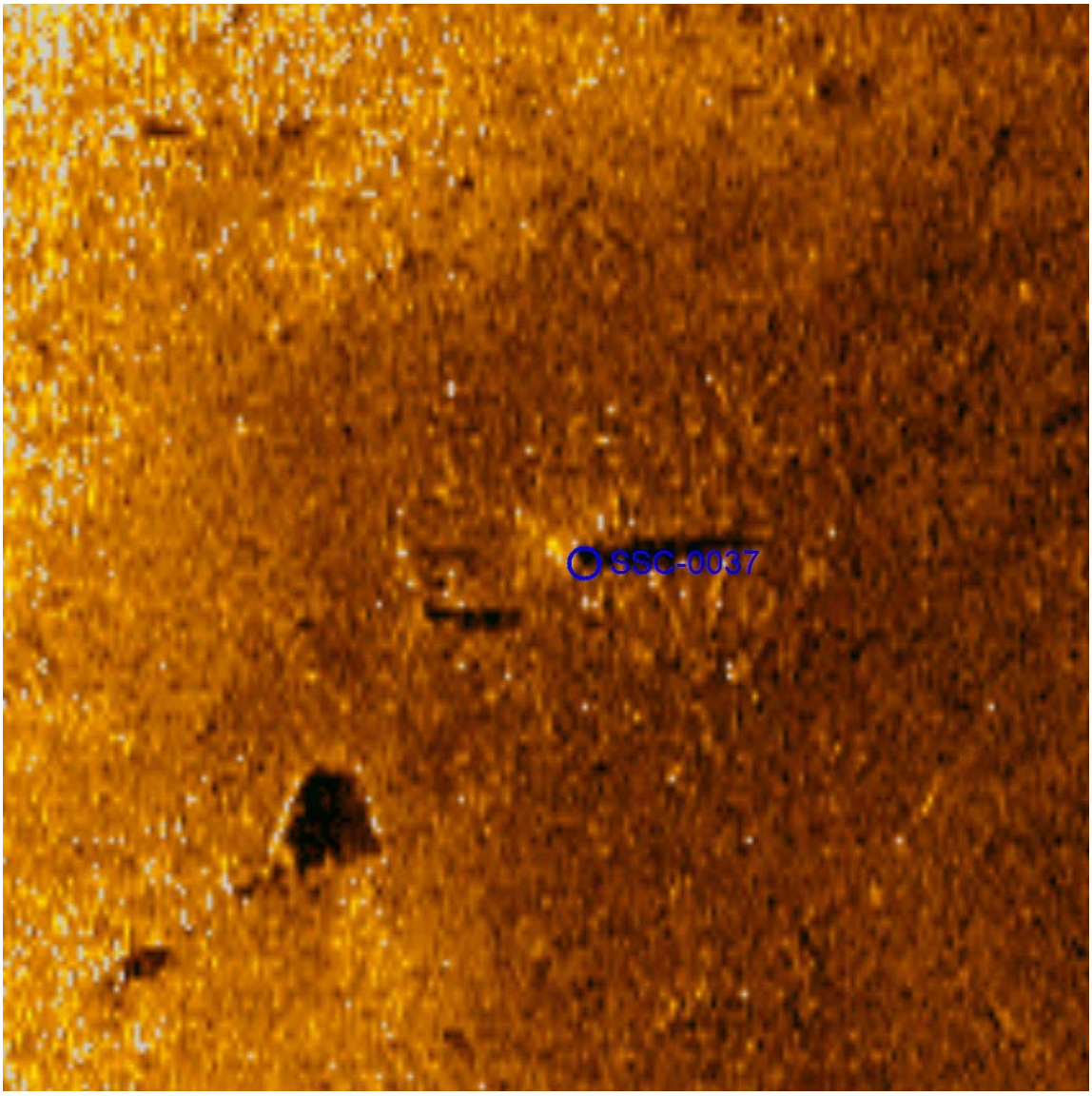


SSC-0036

- Sonar Time at Target: 9/29/2017 8:52:50 PM
- Click Position
  42.3925544361 -71.0736927358 (WGS84)
  42.3924575794 -71.0741965840 (NAD27LL)
  42.3925544361 -71.0736927358 (LocalLL)
  (X) 771326.46 (Y) 2968364.62 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205115.jsf
- Ping Number: 57421
- Range to target: 17.12 US ft

Dimensions and attributes

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 8.50 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:

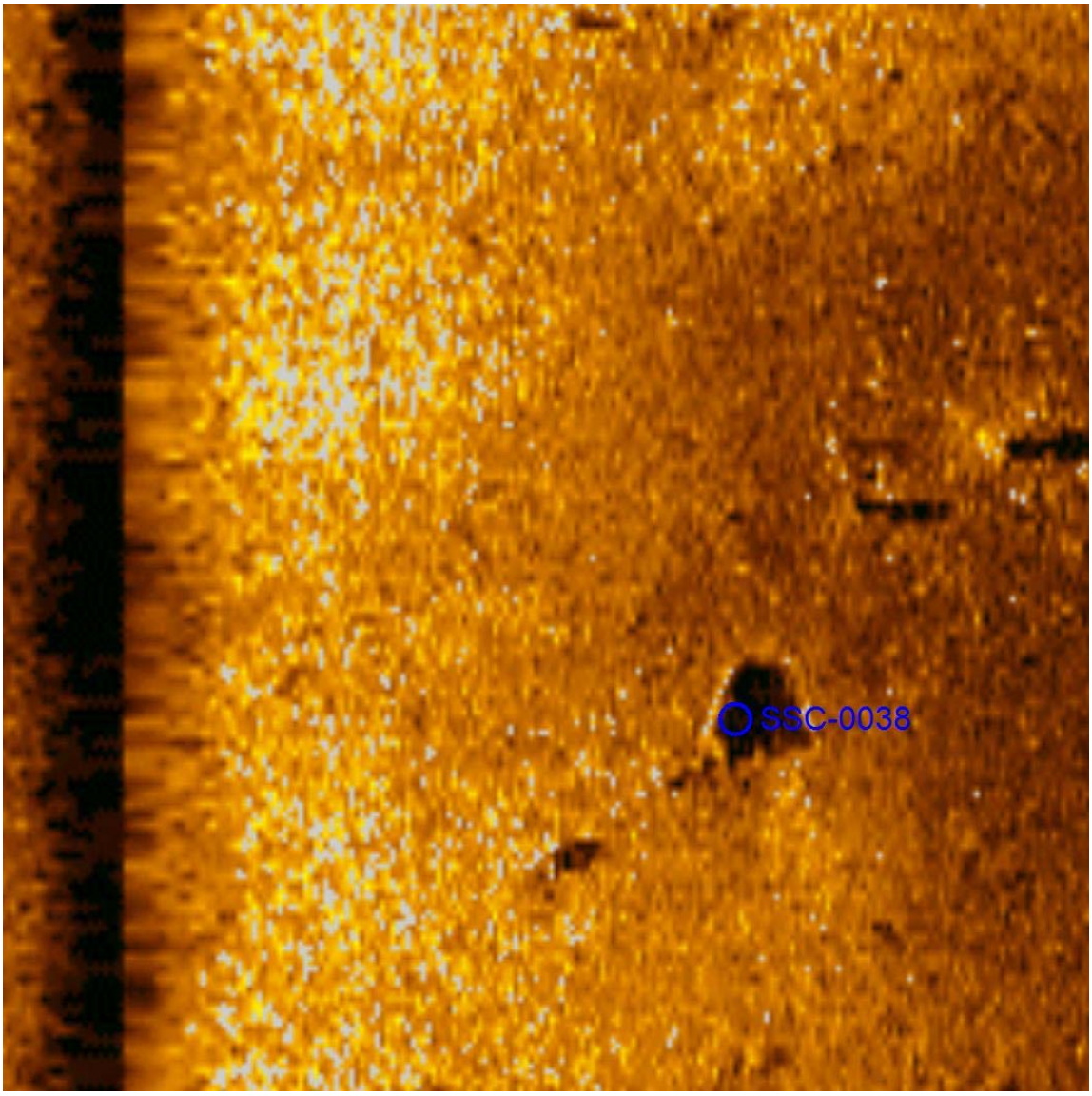


SSC-0037

- Sonar Time at Target: 9/29/2017 8:52:40 PM
- Click Position
  42.3925648145 -71.0734171593 (WGS84)
  42.3924679566 -71.0739210144 (NAD27LL)
  42.3925648145 -71.0734171593 (LocalLL)
  (X) 771400.88 (Y) 2968368.77 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205115.jsf
- Ping Number: 57320
- Range to target: 40.13 US ft

Dimensions and attributes

- Target Width: 3.25 US ft
- Target Height: 1.79 US ft
- Target Length: 3.00 US ft
- Target Shadow: 6.01 US ft
- Classification1: boulders
- Description:

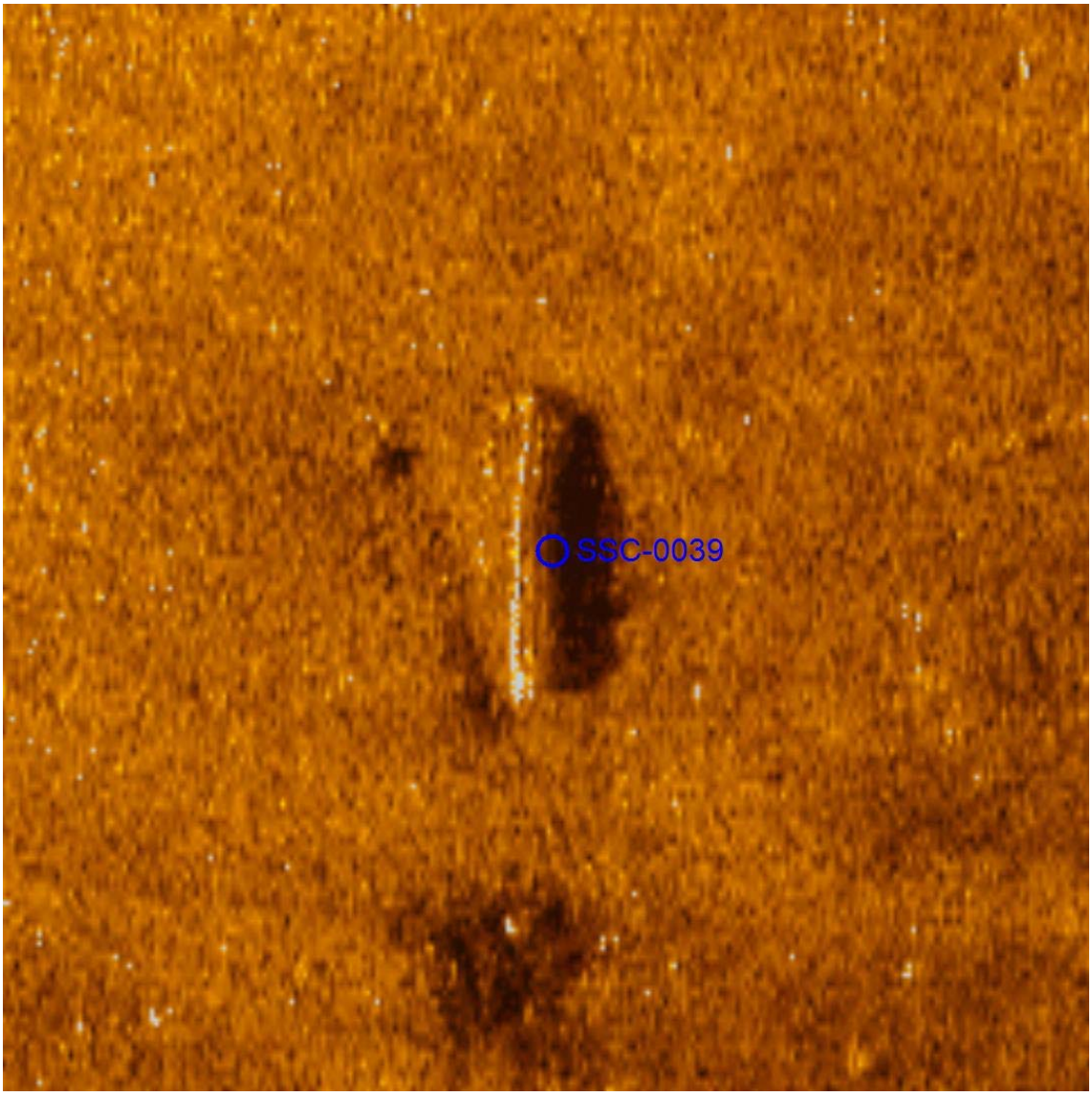


SSC-0038

- Sonar Time at Target: 9/29/2017 8:52:42 PM
- Click Position
  42.3925690099 -71.0734824528 (WGS84)
  42.3924721524 -71.0739863062 (NAD27LL)
  42.3925690099 -71.0734824528 (LocalLL)
  (X) 771383.24 (Y) 2968370.22 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205115.jsf
- Ping Number: 57346
- Range to target: 27.58 US ft

Dimensions and attributes

- Target Width: 2.81 US ft
- Target Height: 1.53 US ft
- Target Length: 4.40 US ft
- Target Shadow: 3.70 US ft
- Classification1: debris
- Description:

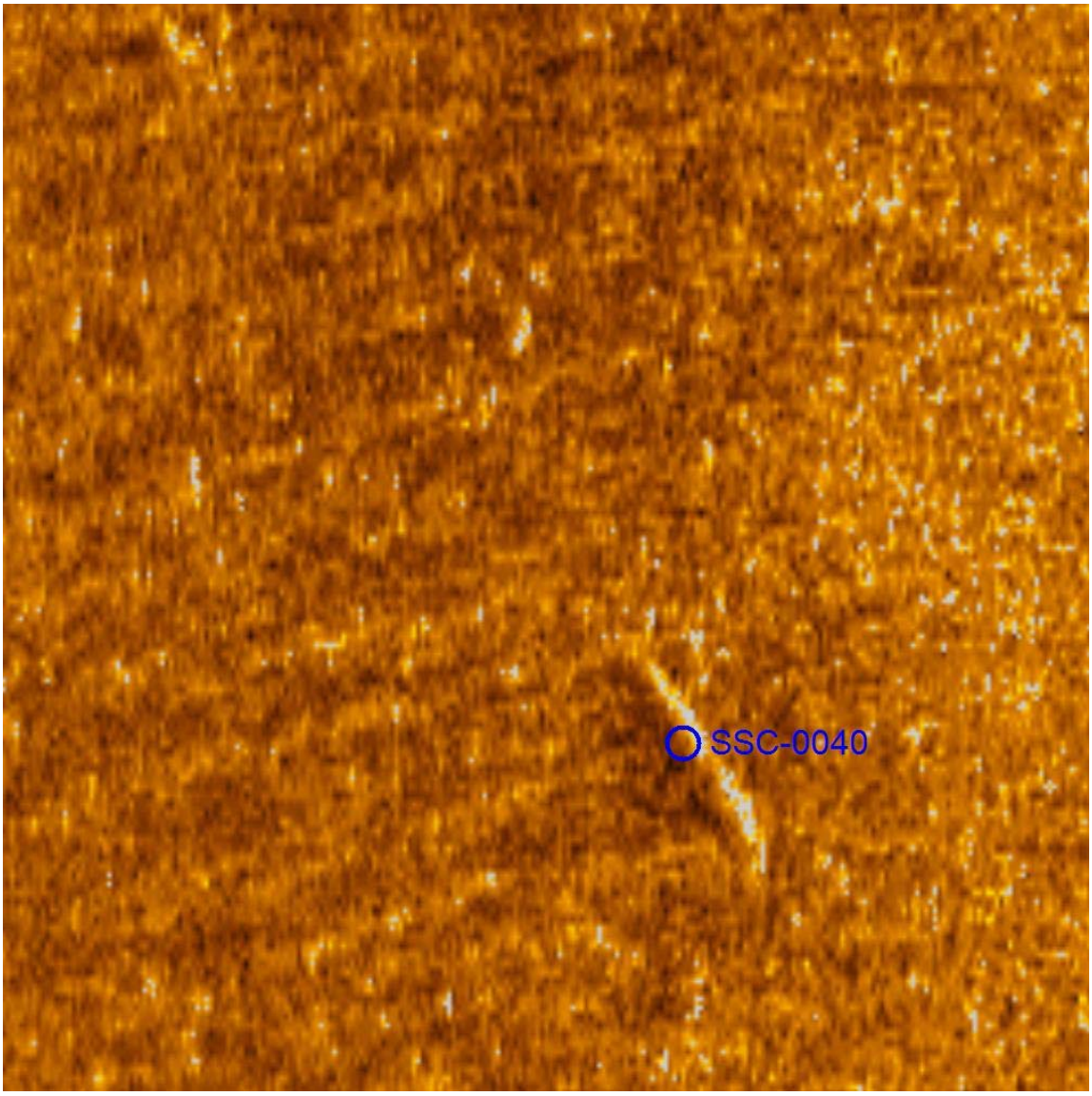


SSC-0039

- Sonar Time at Target: 9/29/2017 8:57:44 PM
- Click Position
  42.3921150127 -71.0721862543 (WGS84)
  42.3920181415 -71.0726901449 (NAD27LL)
  42.3921150127 -71.0721862543 (LocalLL)
  (X) 771734.21 (Y) 2968206.52 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205737.jsf
- Ping Number: 60252
- Range to target: 104.26 US ft

Dimensions and attributes

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 15.31 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:

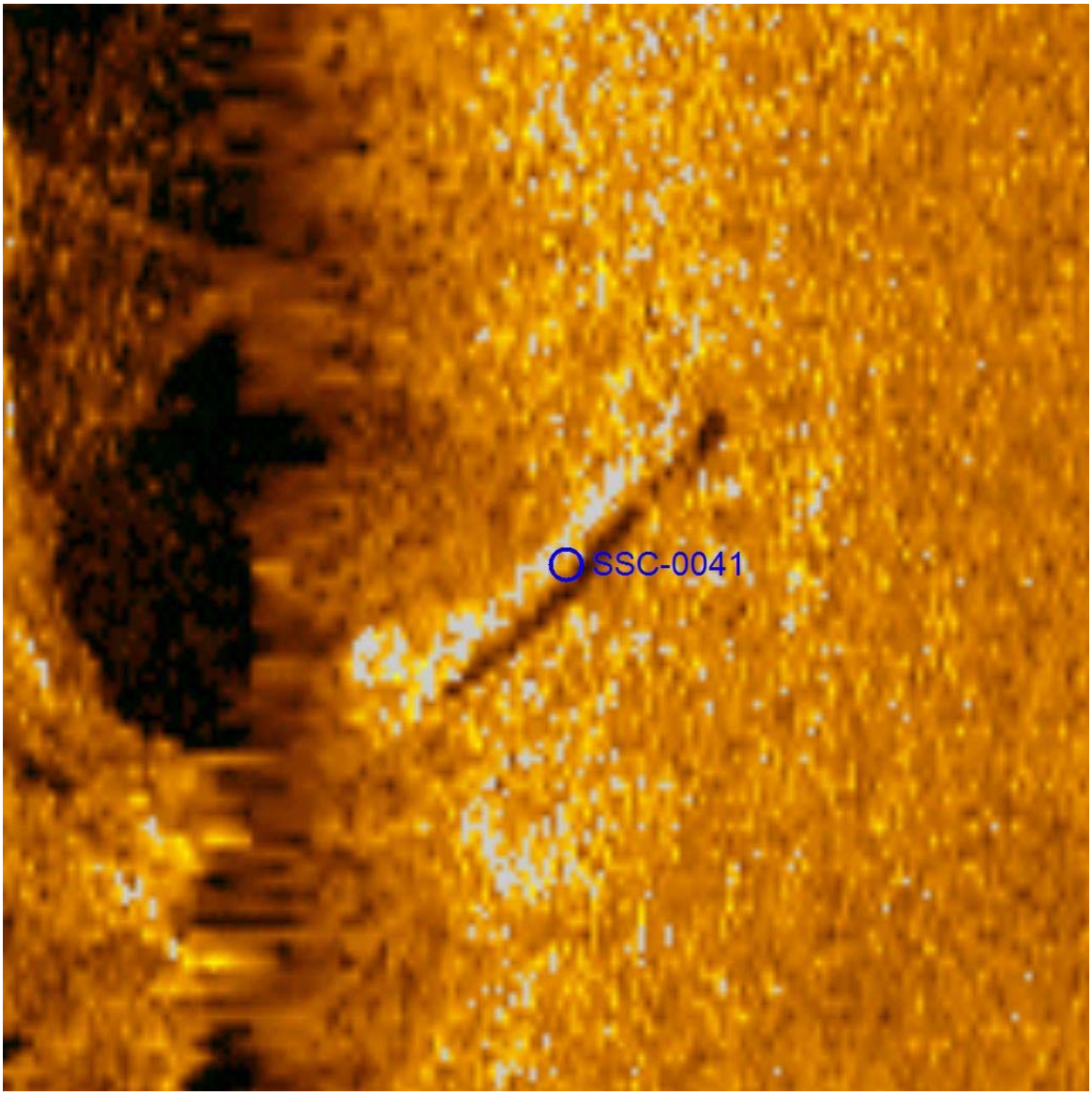


SSC-0040

- Sonar Time at Target: 9/29/2017 9:01:12 PM
- Click Position
  42.3929391299 -71.0728842048 (WGS84)
  42.3928422750 -71.0733880696 (NAD27LL)
  42.3929391299 -71.0728842048 (LocalLL)
  (X) 771544.17 (Y) 2968505.90 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929210027.jsf
- Ping Number: 62248
- Range to target: 123.00 US ft

Dimensions and attributes

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 11.60 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:

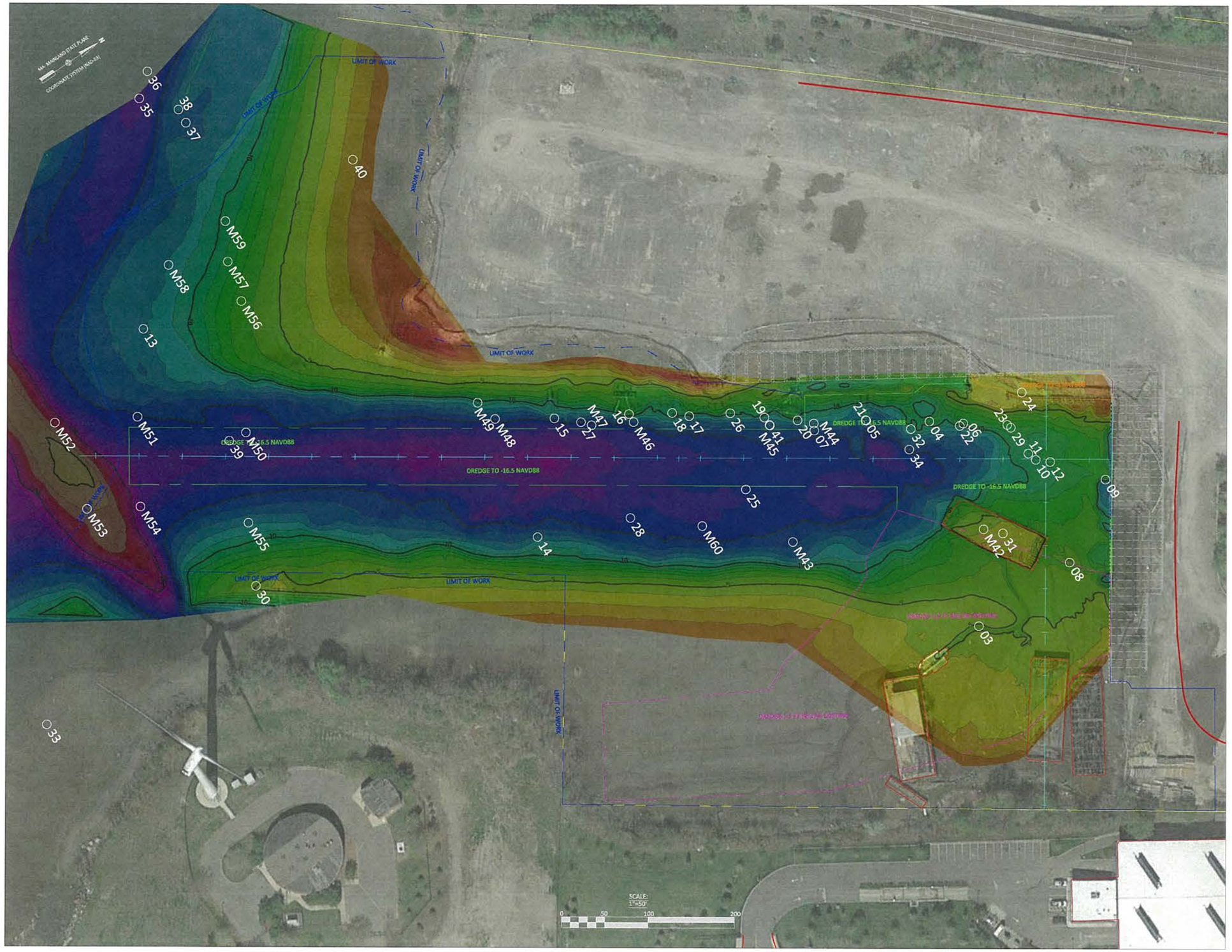


SSC-0041

- Sonar Time at Target: 9/29/2017 9:10:53 PM
- Click Position
  42.3935635020 -71.0709379859 (WGS84)
  42.3934666469 -71.0714418937 (NAD27LL)
  42.3935635020 -71.0709379859 (LocalLL)
  (X) 772068.75 (Y) 2968736.08 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929211041.jsf
- Ping Number: 67838
- Range to target: 10.85 US ft

Dimensions and attributes

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 12.66 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:



GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS EXISTING ON 9/23/17 AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. SOUNDING DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, A R2 SONIC 2024 200 KHZ MULTI-BEAM SONAR, TRIMBLE SPS855 RTK GPS POSITIONING SYSTEM WITH BASE STATION CORRECTIONS, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. CONTOURS GENERATED FROM 1X1 MINIMUM SOUNDINGS, ACTUAL SOUNDING LOCATION.

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET.

6. SATELLITE IMAGERY APPROXIMATE LOCATION, FOR VISUAL REFERENCE ONLY.

WYNN BOSTON HARBOR SEDIMENT REMEDIATION

DEBRIS SURVEY TARGETS ALIGNMENT MINIMUM CONTOURS

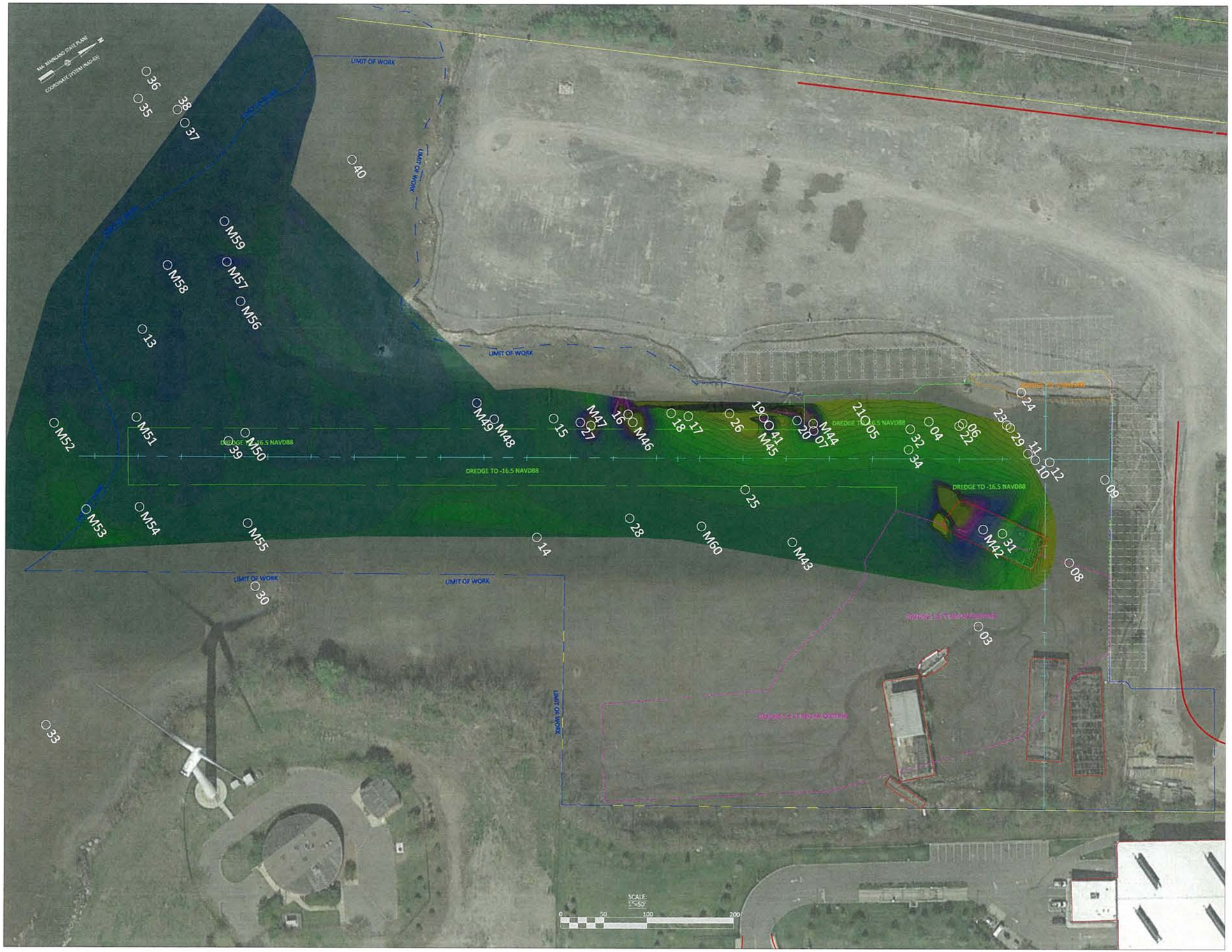
PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118

STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net

REVISIONS:

NO:	DATE:	REVISION:

Date: 10/6/17	Scale: 1"=50'
Drawn By: KT	Chk'd By: ES
Project: CHARTER_WYNN_2017	
Sheet Number: 1 of 3	



GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS EXISTING ON 9/29/17 AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. MAGNETOMETER DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, AN GEOMETRICS 882 MAGNETOMETER, A TRIMBLE SP585S RTK GPS POSITIONING SYSTEM WITH VRS CORRECTIONS, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. MAGNETOMETER DATA GENERATED USING DATA ON A 2FT SORT, WITH A RANGE OF 48,000-58,000 GAMMA AND CONTOURS STEPS AT 250 GAMMA.

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET.

6. SATELLITE IMAGERY APPROXIMATE LOCATION, FOR VISUAL REFERENCE ONLY.

WYNN BOSTON HARBOR SEDIMENT REMEDIATION

DEBRIS SURVEY MAGNETOMETER CONTOURS

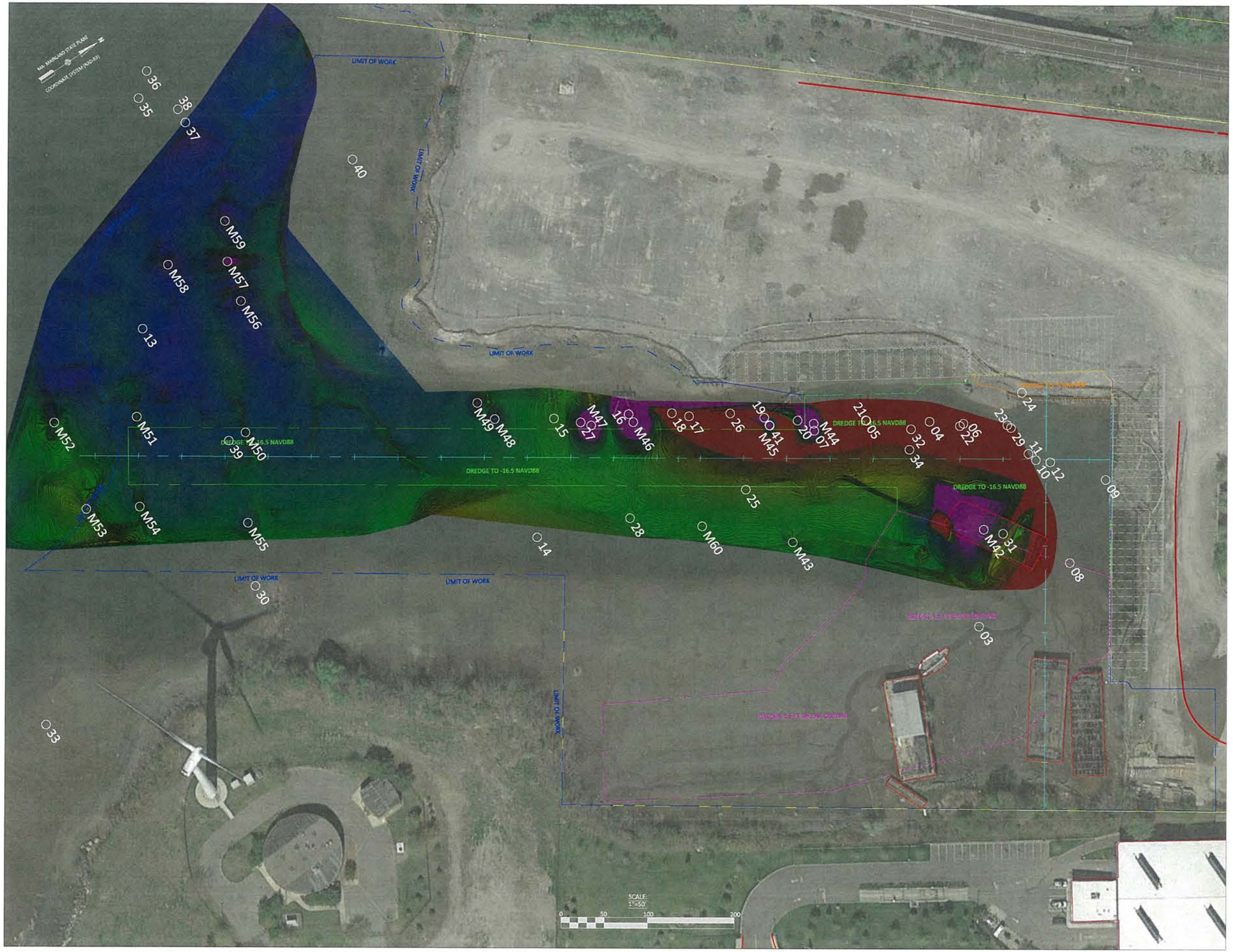
PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118

STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net

REVISIONS:

NO:	DATE:	REVISION:

Date: 10/6/17	Scale: 1"=50'
Drawn By: KT	Chk'd By: ES
Project: CHARTER_WYNN_2017	
Sheet Number: 2 of 3	



GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS EXISTING ON 9/29/17 AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. MAGNETOMETER DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, AN GEOMETRICS 882 MAGNETOMETER, A TRIMBLE SP5855 RTK GPS POSITIONING SYSTEM WITH VRS CORRECTIONS, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. MAGNETOMETER DATA GENERATED USING DATA ON A 2FT SORT, WITH A RANGE OF 49,900-52,000 GAMMA AND CONTOURS STEPS AT 10 GAMMA.

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET.

6. SATELLITE IMAGERY APPROXIMATE LOCATION, FOR VISUAL REFERENCE ONLY.

WYNN BOSTON HARBOR SEDIMENT REMEDIATION

DEBRIS SURVEY MAGNETOMETER CONTOURS

PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118

STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net

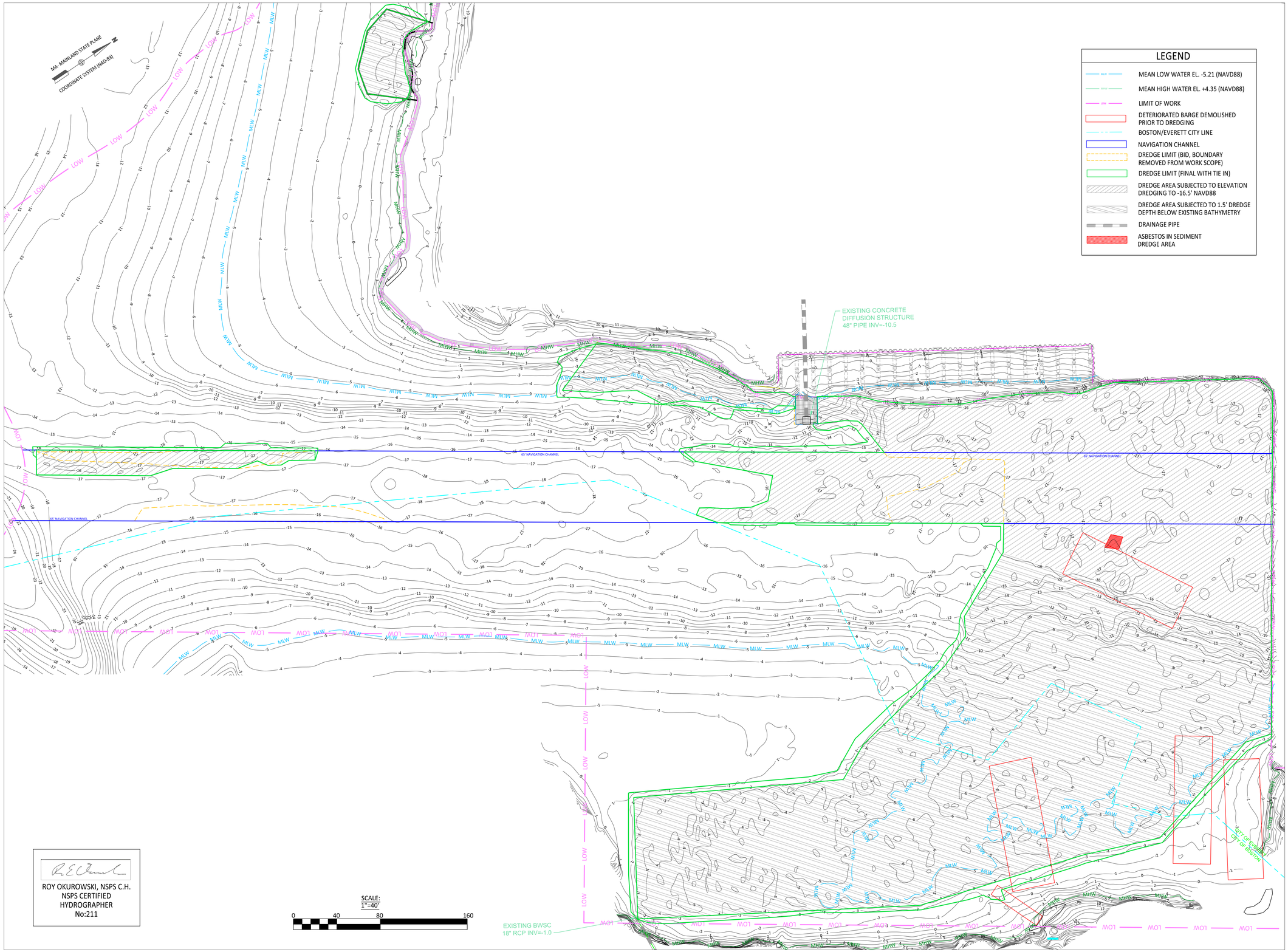
REVISIONS:

NO:	DATE:	REVISION:

Date: 10/6/17	Scale: 1"=50'
Drawn By: KT	Chk'd By: ES
Project: CHARTER_WYNN_2017	
Sheet Number: 3 of 3	

APPENDIX E

Record Drawings



LEGEND

- MEAN LOW WATER EL. -5.21 (NAVD88)
- MEAN HIGH WATER EL. +4.35 (NAVD88)
- LIMIT OF WORK
- DETERIORATED BARGE DEMOLISHED PRIOR TO DREDGING
- BOSTON/EVERETT CITY LINE
- NAVIGATION CHANNEL
- DREDGE LIMIT (BID, BOUNDARY REMOVED FROM WORK SCOPE)
- DREDGE LIMIT (FINAL WITH TIE IN)
- DREDGE AREA SUBJECTED TO ELEVATION DREDGING TO -16.5' NAVD88
- DREDGE AREA SUBJECTED TO 1.5' DREDGE DEPTH BELOW EXISTING BATHYMETRY
- DRAINAGE PIPE
- ASBESTOS IN SEDIMENT DREDGE AREA

GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS OF COMBINED PROGRESS SURVEY DATA COMPRISING OF 1/22/18 THROUGH THE INITIAL BEFORE DREDGE SURVEY PERFORMED ON 10/4/17, AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. SOUNDING DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, A R2 SONIC 2024 200 KHZ MULTI-BEAM SONAR, TOPOGRAPHIC DATA COLLECTED WITH A MERLIN TOPOGRAPHIC LASER, TRIMBLE SPS855 RTK GPS POSITIONING SYSTEM WITH BASE STATION CORRECTIONS, CODA F175 IMU, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. CONTOURS GENERATED FROM 3X3 AVERAGE SOUNDINGS, DEPTH BELOW NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD(88).

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET. PROJECT BENCHMARK IS POINT "1215" DRILL HOLE IN CONCRETE, ELEV: 10.07' NAVD(88).

6. ALL BACKGROUND FILES, INCLUDING PROPERTY LINES, WORK LIMIT, SITE BASE MAP AND FEATURES PROVIDED BY CHARTER CONTRACTING.

WYNN BOSTON HARBOR SEDIMENT REMEDIATION

POST-DREDGE COMBINED SURVEY CONTOURS

PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118

STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net

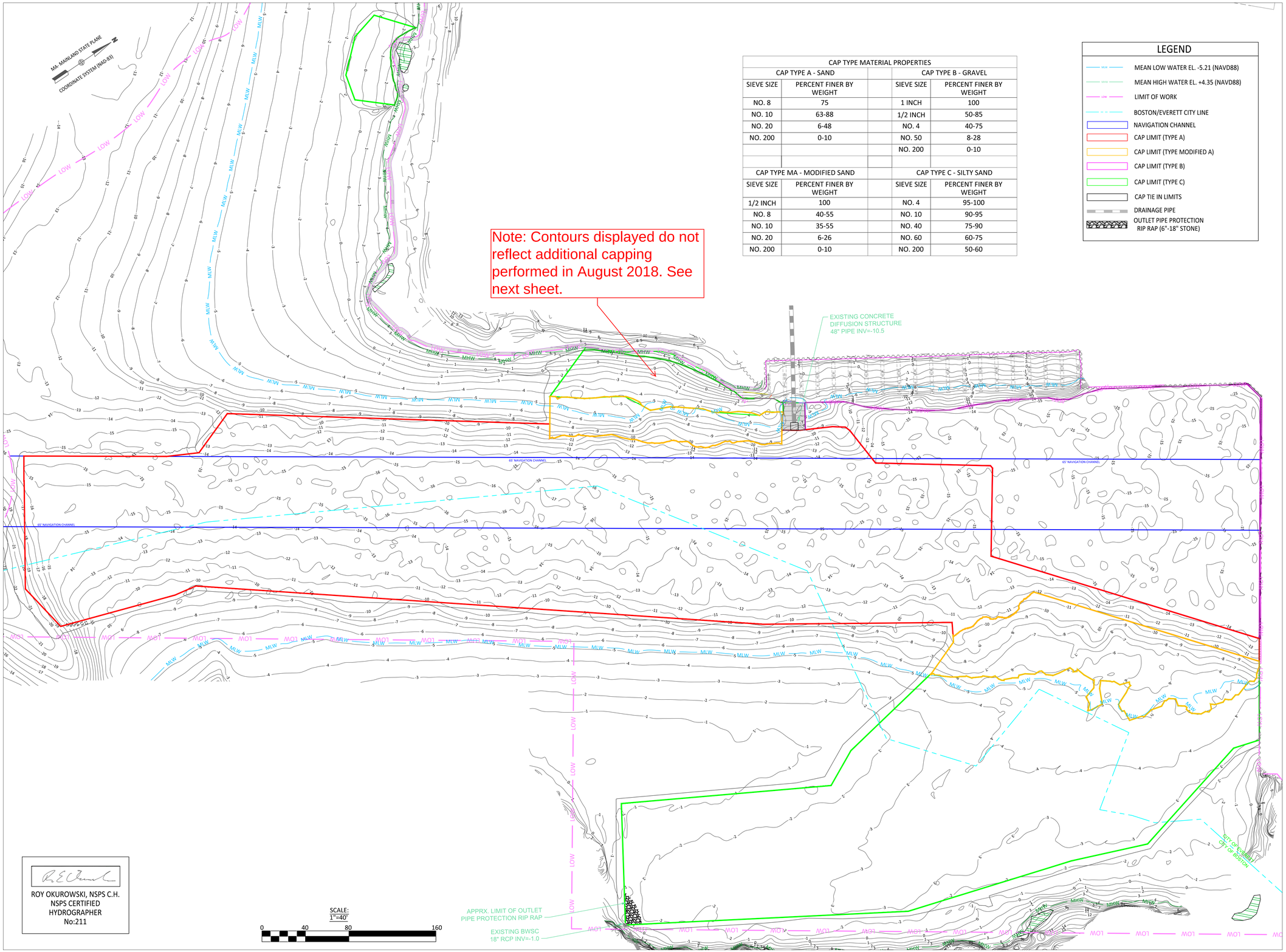
REVISIONS:

NO:	DATE:	REVISION:

Date: 1/22/18	Scale: 1"=40'
Drawn By: KT	Chk'd By: ES
Project: CHARTER_WYNN_2017	
Sheet Number: 1 of 1	

ROY OKUROWSKI, NSPS C.H.
NSPS CERTIFIED
HYDROGRAPHER
No:211

SCALE:
1"=40'
0 40 80 160



CAP TYPE MATERIAL PROPERTIES				
CAP TYPE A - SAND			CAP TYPE B - GRAVEL	
SIEVE SIZE	PERCENT FINER BY WEIGHT		SIEVE SIZE	PERCENT FINER BY WEIGHT
NO. 8	75		1 INCH	100
NO. 10	63-88		1/2 INCH	50-85
NO. 20	6-48		NO. 4	40-75
NO. 200	0-10		NO. 50	8-28
			NO. 200	0-10
CAP TYPE MA - MODIFIED SAND			CAP TYPE C - SILTY SAND	
SIEVE SIZE	PERCENT FINER BY WEIGHT		SIEVE SIZE	PERCENT FINER BY WEIGHT
1/2 INCH	100		NO. 4	95-100
NO. 8	40-55		NO. 10	90-95
NO. 10	35-55		NO. 40	75-90
NO. 20	6-26		NO. 60	60-75
NO. 200	0-10		NO. 200	50-60

LEGEND

- MEAN LOW WATER EL. -5.21 (NAVD88)
- MEAN HIGH WATER EL. +4.35 (NAVD88)
- LIMIT OF WORK
- BOSTON/EVERETT CITY LINE
- NAVIGATION CHANNEL
- CAP LIMIT (TYPE A)
- CAP LIMIT (TYPE MODIFIED A)
- CAP LIMIT (TYPE B)
- CAP LIMIT (TYPE C)
- CAP TIE IN LIMITS
- DRAINAGE PIPE
- OUTLET PIPE PROTECTION RIP RAP (6"-18" STONE)

GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS OF COMBINED PROGRESS SURVEY DATA COMPRISING OF 2/13/18-3/20/18, AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. SOUNDING DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, A R2 SONIC 2024 200 KHZ MULTI-BEAM SONAR, TOPOGRAPHIC DATA COLLECTED WITH A MERLIN TOPOGRAPHIC LASER, TRIMBLE SPS855 RTK GPS POSITIONING SYSTEM WITH BASE STATION CORRECTIONS, CODA F175 IMU, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. CONTOURS GENERATED FROM 3X3 AVERAGE SOUNDINGS, DEPTH BELOW NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD(88).

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET. PROJECT BENCHMARK IS POINT "1215" DRILL HOLE IN CONCRETE, ELEV: 10.07' NAVD(88).

6. ALL BACKGROUND FILES, INCLUDING PROPERTY LINES, WORK LIMIT, SITE BASE MAP AND FEATURES PROVIDED BY CHARTER CONTRACTING.

WYNN BOSTON HARBOR SEDIMENT REMEDIATION

FINAL CAP SURVEY CONTOURS

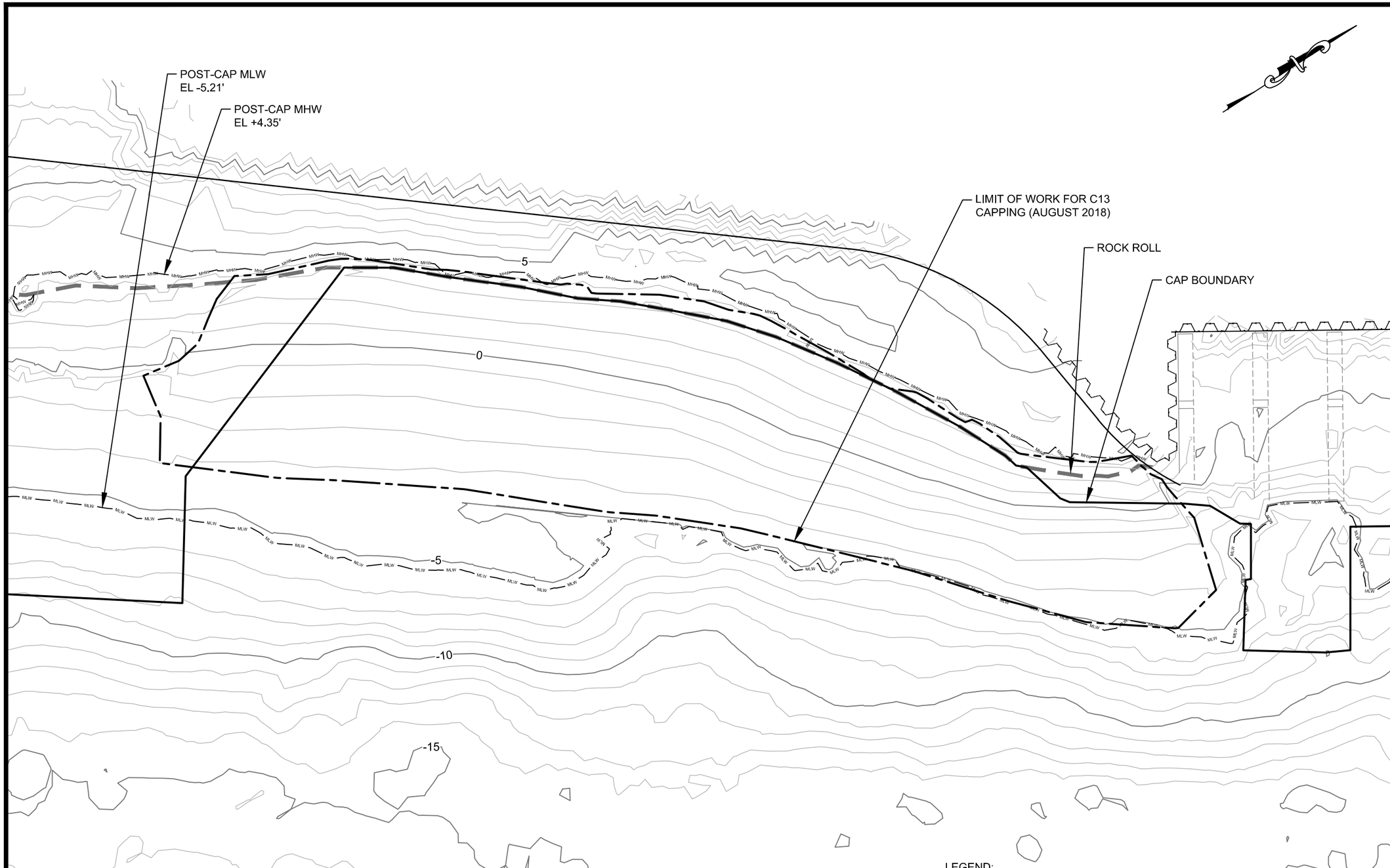
PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118

STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net

ROY OKUROWSKI, NSPS C.H.
NSPS CERTIFIED
HYDROGRAPHER
No:211

REVISIONS:		
NO:	DATE:	REVISION:

Date: 3/20/18	Scale: 1"=40'
Drawn By: KT	Chk'd By: ES
Project: CHARTER_WYNN_2017	
Sheet Number: 1 of 1	



SOURCE:

SURVEY DATA INSIDE THE C13 LIMIT OF WORK COLLECTED BY FELDMAN SURVEYORS, DATED 8-9-2018. ALL SURVEY DATA OUTSIDE THE C13 LIMIT OF WORK COLLECTED BY CHARTER ENVIRONMENTAL, DATED 4-9-2018.

0' 10' 20' 30'

1" = 20'

LEGEND:

- MLW — MEAN LOW WATER (-5.21' NAVD88)
- MHW — MEAN HIGH WATER (+4.35' NAVD88)
- -10 — MAJOR CONTOUR WITH ELEVATION
- MINOR CONTOUR
- ROCK ROLL
- LIMIT OF WORK FOR C13 CAPPING (AUGUST 2018)
- CAP BOUNDARY

amec foster wheeler

AMEC MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD MASSACHUSETTS 01824
TELEPHONE: (978) 692-9090
FAX: (978) 692-6633
WEB: WWW.AMECFW.COM

CLIENT:

BOSTON HARBOR Encore

PROJECT:

ENCORE BOSTON HARBOR
SEDIMENT REMEDIATION

REV	DATE	DESCRIPTION

ISSUE / REVISION:

DESIGNED BY: DAA	DRAWN BY: BEG
CHECKED BY: MJG	DATE: AUG 2018
SCALE: AS SHOWN	ISSUE / REVISION: 0

PROJECT NUMBER:
3651170065

TITLE:

C13 FINAL CAP
SURVEY CONTOURS
(NAVD88)

SHEET NUMBER:
1

APPENDIX F

Asbestos-Impacted Sediment Dredging Documentation

ENVIRONMENTAL
HEALTH & ENGINEERING

Environmental Health
& Engineering, Inc.

117 Fourth Avenue
Needham, MA
02494-2725

TEL 800-825-5343
781-247-4300
FAX 781-247-4305

www.eheinc.com

November 6, 2017

Massachusetts Department of Environmental Protection
Northeast Regional Office, Asbestos Section
205B Lowell Street
Wilmington, MA 01887

RE: Non-Traditional Asbestos Abatement Work Plan— Wynn Boston Harbor Sediment Disposal (EH&E 21802)

To Whom It May Concern:

On behalf of Wynn MA, LLC, Environmental Health & Engineering, Inc. (EH&E) prepared this non-traditional asbestos abatement work plan (NT Plan) describing the measures to be implemented for bulk loading, packaging, transport, and offsite disposal of sediment that is an asbestos-contaminated waste material (ACWM) at the Wynn Boston Harbor development project (the Project) located at 1 Horizon Way in Everett, Massachusetts. Project activities are also subject to the provisions of the Phase IV Remedy Implementation Plan for RTN 3-0013341.

1) DOCUMENTATION AND RESPONSIBILITIES

Massachusetts Department of Environmental Protection (MassDEP) Form AQ 36 *Application for Non-Traditional Asbestos Abatement Work Practice Approval* is being submitted with this plan along with the $600 fee (copies in Appendix A). After approval of this NT Plan, the contractor will file Asbestos Notification Form ANF-001 to the MassDEP Northeastern Regional Office (NERO) Asbestos Program. The following entities have responsibility under this plan:

- Charter Contracting Company, LLC. (Charter), who is a Massachusetts licensed asbestos abatement contractor, will perform all asbestos-related work under this NT Plan, including hauling the waste to the disposal facility. Charter is subcontracted to SPS New England, Inc.

- Massachusetts licensed asbestos project monitors from LBP Solutions, LLC (LBP) will provide perimeter air sampling and visual inspections required by this plan.

- The disposal facility will be Waste Management Turnkey (Rochester, New Hampshire) or Waste Management Crossroads Landfill (Norridgewock, Maine).

2) MATERIALS MANAGED

The volume of ACWM to be handled under this NT Plan is 25 cubic yards (CY) and consists of sediment containing less than 1% asbestos. Charter performed precharacterization sampling in locations of the site where sediment removal was planned for the Project, including collecting samples for asbestos analysis in 84 locations shown in the first figure of Appendix B. No asbestos was detected in any of these samples, except one from Grid 46, which had a result of <1% asbestos. Charter subsequently sampled sediment corresponding to a volume of 25 CY to the depth of planned dredging at four locations around the <1% asbestos sample as shown in the second figure in Appendix B. No asbestos was detected in any of the four delineation samples. Sediment within the bounds of these four samples is assumed to be ACWM and will be disposed of under this NT Plan. All asbestos in sediment laboratory results are included in Appendix C.

3) SEQUENCE OF WORK

All ACWM activities will occur on a deck barge at the dredging site for the Project shown in Appendix D. All ACWM sediment will be disposed of offsite in accordance with this NT Plan; with any additional conditions required in the MassDEP approval of this NT Plan; with packaging, transport, storage, disposal, and waste shipment record requirements for ACWMs outlined in 310 CMR 7.15 (15-18); and with other applicable federal, state, and local requirements. All work will also be conducted in accordance with the contractor's site-specific health and safety plan (HASP). The sequence of work will be:

- Prepare deck barge with perimeter berm covered with polyethylene sheeting or an equivalent impervious material.

- Restrict access to contractor personnel who are appropriately trained and qualified in accordance with the contractor HASP.

- As detailed in Section 4, the following will occur on the deck barge:

  - Excavate the ACWM sediment directly into leak-tight dewatering boxes.
  - Dewater the sediment in the boxes through 5-micron filters.
  - If needed, amend sediment that cannot be dewatered enough with Portland cement to meet disposal facility requirements.

- Implement dust control measures in accordance with Section 5.

- After dewatering, package, transport, and dispose of ACWM in accordance with Section 6.

- Decontaminate equipment and dewatering boxes on the barge in accordance with Section 7.

- Collect perimeter air samples around all sediment excavation, cement mixing, and dewatering box decontamination operations in accordance with Section 8.

- Stop work in the applicable work zone and notify MassDEP immediately if ACWM work activities generate visible dust or if monitoring results meet or exceed the airborne fiber levels described in Section 8 below.

- Following work, inspect areas in accordance with the completion criteria in Section 9.

4) SEDIMENT EXCAVATION AND DEWATERING

The contractor will excavate the specified ACWM with a mechanical dredge equipped with an environmental clam bucket. In addition to the mechanical dredge plant, a barge based water treatment system, a push boat, and deck barge with leak-tight dewatering boxes will be onsite to support the dredge. All dredging will be conducted in a permeable turbidity curtain and sorbent boom. The location and layout of the deck barge is shown in Appendix E.

The deck barge will have a perimeter berm and be covered with polyethylene sheeting or an equivalent impervious material on the deck below prior to the boxes being filled with sediment. The sediment will be excavated into leak-tight 25 CY dewatering boxes with dimensions of a standard roll-off, lined with 400-micron filter fabric detailed in Appendix F. Although it is expected that two dewatering boxes will be adequate, up to five boxes will be available if additional capacity is needed, depending on the moisture content of the sediment.

The dredge will place each bucket of sediment directly into the dewatering boxes, which will be immediately closed after being filled and fully water-tight. As each box is filled, pumping systems will be attached to drains on each box to send the liquid through a dedicated 5-micron filter system on the deck barge. After passing through the 5-micron filter, the water will travel to the full water treatment system detailed in Appendix G to ultimately be discharged within the turbidity curtain onsite.

All ACWM must be free of standing water and pass a paint filter test prior to offsite disposal. Although it is expected that the dewatering boxes will be effective enough, sediment that cannot be drained of free-standing liquid will be amended to meet the requirements of the disposal facility. To achieve these results, Portland cement will be mixed into the dewatering boxes on the deck barge. An excavator with a mixing head will be utilized to mix the cement into each box. After mixing, each box will be closed while the cement cures for approximately 24 hours. Once acceptable for transport and disposal, the boxes will be packaged, transported and disposed in accordance with Section 6. Additionally, all PPE, liners, filter bags, polyethylene sheeting, and other contaminated materials will be disposed as ACWM with the sediment.

5) DUST CONTROL

Dust control will be implemented by the contractor during all ACWM operations. Visible dust emissions from ACWM work will not be allowed. The contractor will provide necessary measures to control the generation of dust from activities and to prevent visible dust emissions. Dust suppression techniques such as wetting, misting, and ensuring the material is damp will be employed as necessary to control dust levels. While being dewatered, each ACWM box will be designated as containing ACWM and maintained closed and sealed.

Work will be temporarily halted, MassDEP will be notified immediately, and dust suppression techniques will be modified or enhanced if onsite ACWM work activities generate visible dust. Visible emissions from non-suspect sources such as vehicle exhausts, dust from uncontaminated construction areas, pollen, etc. will not be considered cause for work stoppage.

6) PACKAGING, TRANSPORT, AND DISPOSAL

After being filled to acceptable load capacity, dewatered, and in an acceptable condition for the disposal facility, the contractor will clean exterior surfaces of the sealed dewatering boxes and the deck barge, if needed, until they are visually clean. LBP will visually inspect the work area and boxes in accordance with Section 9. The barge will then be taken to the bulkhead site shown in Appendix D and the boxes will be transported to the disposal facility.

A DOT licensed hauler will transport and dispose of the waste at a landfill permitted to accept asbestos waste. The trucks used for the transport of ACWM must be in good condition. Each truck will display the orange placard indicating the transport of asbestos-containing materials (Special Waste). With each shipment of waste, the contractor will complete a waste shipment record (WSR) with all information required by 40 CFR 61.149 and 310 CMR 7.15(18). All packaged waste materials will include warning labels, waste generator labels, and waste shipment records with all information required by MassDEP, U.S. Environmental Protection Agency (EPA), U.S. Occupational Health and Safety Administration (OSHA), and U.S. Department of Transportation (DOT). Class 9 placards (2212) shall be affixed to all exterior sides of each box while onsite, and must remain affixed to the dumpster until the ACWM has been removed from the bin at the receiving facility. Labels shall be printed in letters of sufficient size and contrast so as to be readily visible and legible.

The contractor will dispose of all ACWM generated during the Project in a landfill permitted to accept ACWM. The facility will be Waste Management Turnkey Landfill (Rochester, New Hampshire) or Waste Management Crossroads Landfill (Norridgewock, Maine). The contractor will provide the owner with Waste Shipment Records within 30 days following waste disposal. The contractor shall also submit copies of WSRs to MassDEP NERO on a daily basis via NERO.asbestos@state.ma.us.

After the ACWM is dumped at the disposal facility, the boxes will be closed/sealed and transported back to the Wynn site for decontamination as discussed below.

7) DECONTAMINATION

Each piece of equipment that contacts ACWM will be decontaminated on the deck barge by washing with water. All decontamination water will be treated through a 5-micron filter and full treatment system. The following will be decontaminated prior to use on other parts of the site:

- Dredge bucket
- Filter skid (filters themselves will be disposed of as ACWM waste)
- Mixing head

The sealed/closed dewatering boxes will be returned to the site and be decontaminated. The boxes will be decontaminated by washing with water on the deck barge, with wash water collected and treated through the 5-micron filter and full treatment system.

8) PERIMETER ASBESTOS MONITORING

LBP will collect air samples around the perimeter of each active ACWM zone, including during excavation, mixing with Portland cement (if needed), and dewatering box decontamination:

- Area air samples will be collected in at least four locations around each ACWM operation. High flow pumps will be used to collect air samples with sufficient air volumes to achieve detection limits below 0.010 fibers per cubic centimeter (f/cc). During full workdays, two sets of samples will be collected around each location: one set for approximately half of the workday (morning) and a second set for the remainder of the workday (afternoon).

- Samples will be analyzed for total airborne fibers, using Phase Contrast Microscopy (PCM) on an immediate basis. Results from the first set of samples will be available quickly enough that corrective actions, if warranted, can be implemented the same workday. Results from the second set will be available such that corrective actions, if warranted, can be implemented by the morning of the next workday.

- Any individual perimeter air sampling result that meets or exceeds 0.010 f/cc potentially related to Project ACWM work will result in immediate:

  - Stoppage of ACWM work in the applicable work zone,
  - Notification to the MassDEP NERO Asbestos Program, and
  - Reevaluation and improvement of work practices, engineering controls, and dust/fiber suppression methods, if warranted.

- Air sampling results will also be provided on a daily basis to the MassDEP NERO Asbestos Program at NERO.asbestos@state.ma.us.

- Air samples will be collected and analyzed onsite by LBP using PCM in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

9) COMPLETION CRITERIA AND FINAL INSPECTIONS

Visual inspection will be used to evaluate completion of NT Plan activities for the Project. LBP representatives will inspect each work area and deem ACWM operations complete when:

- All ACWMs covered by the plan have been removed.

- All equipment has been adequately decontaminated in accordance with this NT Plan and is visually clean and free of ACWMs.

- Exterior surfaces of the dewatering boxes and the deck barge are visually clean and free of ACWMs before being removed from the barge for transport to the disposal facility.

- Exterior surfaces of the dewatering boxes, interior surfaces of the dewatering boxes, and the deck barge are visually clean and free of ACWMs after being decontaminated.

- All work areas are visibly clean and free of ACWMs.

If you have any questions, please feel free to contact us at 1-800-TALK-EHE (1-800-825-5343).

Sincerely,

Adam S. Bisol
Massachusetts Licensed
Asbestos Designer AD034163

William S. Wade, C.I.H.
Senior Scientist/Project Manager

Appendix A BWP AQ 36 Application and Copies of Payment and Transmittals
Appendix B Sample Locations and Locations of Asbestos Contaminated Sediment
Appendix C Asbestos Laboratory Test Results
Appendix D Site Locus Plan
Appendix E Site Operation Plans
Appendix F Dewatering Box Details
Appendix G Water Treatment System Description

cc: John MacAuley, Asbestos Enforcement Section Chief, MassDEP NERO [via email]
Andrew Clark, MassDEP NERO [via email]
Matthew Grove, LSP, Senior Project Manager, AMEC Foster Wheeler [via email]
Natalie Brown, Wynn Design and Development [via email]
Chris Gordon, Wynn Design and Development [via email]

APPENDIX A
BWP AQ 36 APPLICATION AND COPIES OF PAYMENT AND TRANSMITTALS

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
BWP AQ 36 Application for Non-Traditional Asbestos Abatement Work Practice Approval

A. Work Site Information

Important: When completing forms on a computer, use only the tab key to move your cursor - do not use the return key.

Facility

Wynn Boston Harbor
Facility Name or Site Description

1 Horizon Way
Facility Address

Everett	MA	02149
City/Town	State	ZIP Code

Owner

Wynn MA LLC
Owner Name

101 Station Landing, Suite 2200
Owner Address

Medford	MA	02155
City/Town	State	ZIP Code

857-770-7000	
Telephone Number	Email Address

Applicant - ☒ Check here if same as Owner and skip to next section. Otherwise, complete fields below.

Applicant Name

Applicant Address

City/Town	State	ZIP Code

Telephone Number	Email Address

B. Project Information

Asbestos Abatement Project Designer

Adam S. Bisol	AD 034163
Name	Department of Labor Standards (DLS) Project Designer Cert. Number

Environmental Helath and Engineering, 117 Fourth Avenue
Address

Needham	MA	02494
City/Town	State	ZIP Code

781-247-4300	abisol@eheinc.com
Telephone Number	Email Address

Asbestos Abatement Contractor

Charter Contracting Company, LLC	AC 000877
Contractor Name	Department of Labor Standards (DLS) Contractor License Number

500 Harrison Avenue, Suite 4R
Address

Boston	MA	02118
City/Town	State	ZIP Code

857-246-6800	
Telephone Number	Email Address

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
BWP AQ 36 Application for Non-Traditional Asbestos Abatement Work Practice Approval

B. Project Information (continued)

Demolition Contractor (If Applicable)

Contractor Name

Address

City/Town | State | ZIP Code

Telephone Number | Email Address

Circumstances – Check the appropriate box(es) to indicate why a Non-Traditional Asbestos Abatement Work Practice Approval is needed.

☐ Facility is being demolished under a state or local government order because it is structurally unsound and in danger of imminent collapse. (Please attach a copy of the order to your work plan proposal.)

☐ Asbestos Containing Material (ACM) or Asbestos Containing Waste Material (ACWM) was not accessible for testing, therefore not discovered until after demolition began and, as a result of the demoltion, cannot be safely removed.

☐ Abatement activity is being conducted as part of an emergency renovation operation.

☐ Asbestos abatement activity is being conducted to clean up and decontaminate a facility or portion of a facility where:

- ☐ Previous asbestos abatement activities were not conducted in compliance with 310 CMR 7.15, or
- ☐ ACM deterioration, if not immediately attended to, would present a safety or public health hazard.

☐ Wetting during a facility renovation would unavoidably damage equipment or present a safety hazard.

☒ The project requires bulk loading of ACM and/or ACWM.

List the requirements of 310 CMR 7.15 that you are unable to comply with and explain why:

Asbestos contaminated sediment will be bulk loaded for offsite disposal. Please see atatched Non-Traditional Asbestos Abatement Work Plan

Other Project Details

Project Start Date: 11/10/2017 (MM/DD/YYYY) | Project End Date: 11/20/2017 (MM/DD/YYYY)

Types & Amounts of ACM and/or ACWM Requiring Non-Traditional Asbestos Abatement Work Practice(s):

☒ Friable: 25 CY (Quantity in Cubic Meters (Cubic Yards)) | ☐ Non-Friable: (Quantity in Cubic Meters (Cubic Yards))

Location(s) of ACM in the Facility:

Asbestos contaminated sediment

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
BWP AQ 36 Application for Non-Traditional Asbestos Abatement Work Practice Approval

C. Certification

"I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment. I am aware that this permit application or notification shall not be deemed valid unless payment of the applicable fee is made."

Signature

Robert DeSalvio
Printed Name

President
Title

11/3/2017
Date (MM/DD/YYYY)

D. Submission of Application

Note: MassDEP review will begin only after your submissions have been received at both locations.

STEP 1: Submit Application

Send the following materials to the appropriate MassDEP Regional Office*, Attention: Asbestos Section:

☒ This original completed and signed form.

☒ A copy of the check or money order from Step 1.

☒ Your proposed work plan, describing work practices, duration and schedule. The proposal must:
- Include signature of the Asbestos Project Designer who prepared it.
- Demonstrate that the deviations from 310 CMR 7.15 and alternatives proposed will not cause any visible emissions to the outside air or pose significant risk to public health, safety or the environment.

☒ All supporting documentation.

*Find the MassDEP Regional Office for the community where this work will be done: http://www.mass.gov/eea/agencies/massdep/about/contacts/

STEP 2: Submit Fee Payment

Send the materials below to this address:

MassDEP
P.O. Box 4062
Boston, MA 02211

☒ A copy of this completed and signed form.

☒ Fee payment of $600* (check or money order payable to "Commonwealth of Massachusetts").

*The following entities are exempt from this fee:
- Cities, towns, counties or districts of the Commonwealth
- Federally recognized Indian tribe housing authorities
- Municipal housing authorities
- The Massachusetts Bay Transportation Authority (MBTA)

Is this a fee-exempt project? ☐ Yes ☒ No

NOTE: Entities that are exempt from the fee must still submit a copy of this completed and signed form, without payment, to the P.O. box above.

40832

ENVIRONMENTAL HEALTH & ENGINEERING, INC.
117 FOURTH AVENUE
NEEDHAM, MA 02494

CITIZENS BANK
5-7017/2110

CHECK DATE October 25, 2017

Security features. Details on back.

PAY Six Hundred and 00/100 Dollars

TO Commonwealth of Massachusetts

AMOUNT 600.00

OVER $10,000.00 TWO SIGNATURES REQUIRED

AUTHORIZED SIGNATURE

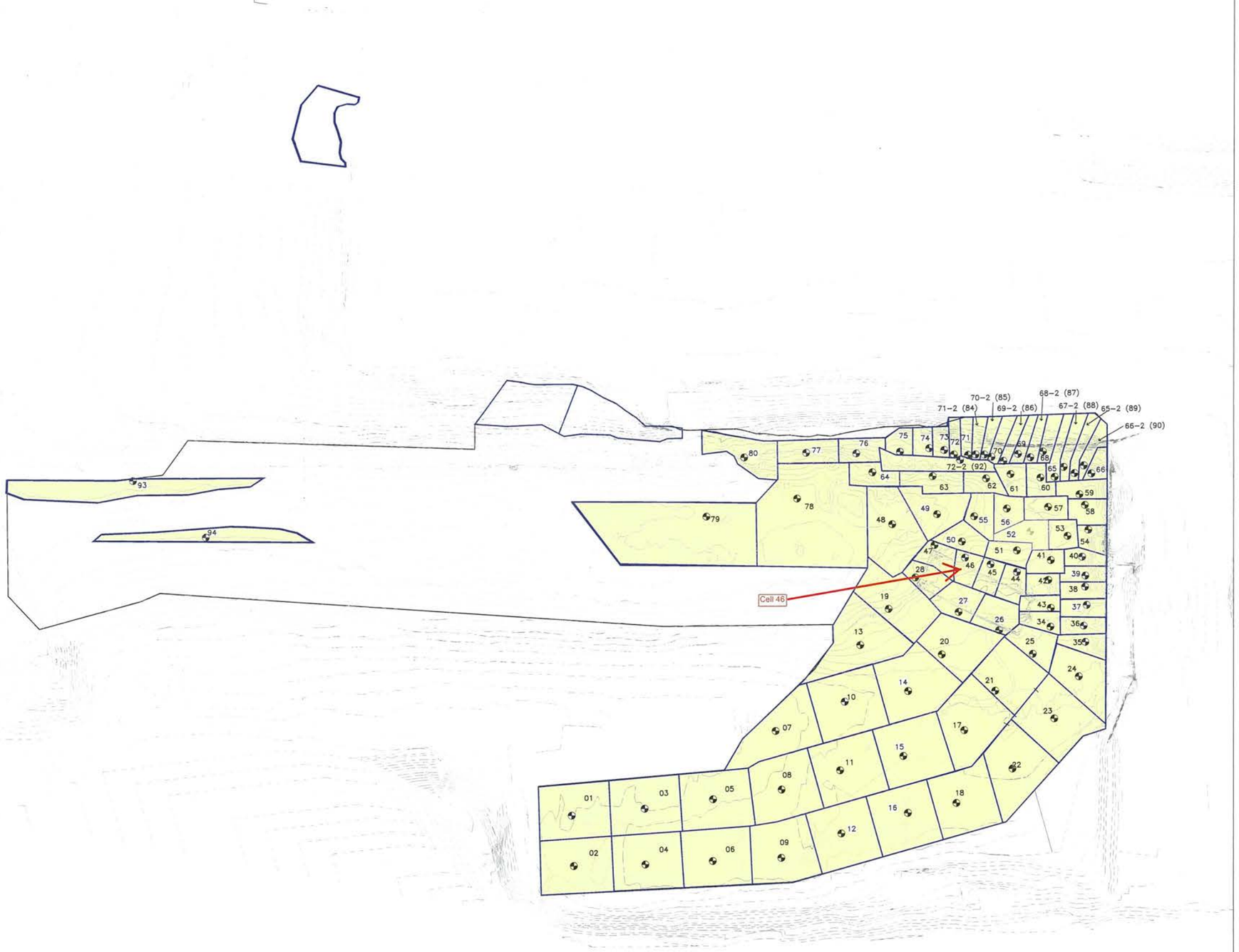
⑈040832⑈ ⑆211070175⑆ 1107819013⑈

ENVIRONMENTAL HEALTH & ENGINEERING, INC. 40832

Check Date: 10/25/2017

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
102517	10/25/2017	000000068646	600.00			600.00
Commonwealth of Massachusetts		TOTAL	600.00			600.00
Cash - Operating Citizens	1	COMDEP				

APPENDIX B
SAMPLE LOCATIONS AND LOCATIONS OF ASBESTOS CONTAMINATED SEDIMENT



LEGEND

SEDIMENT CELL AREA

SEDIMENT CORE LOCATION

NOTES:

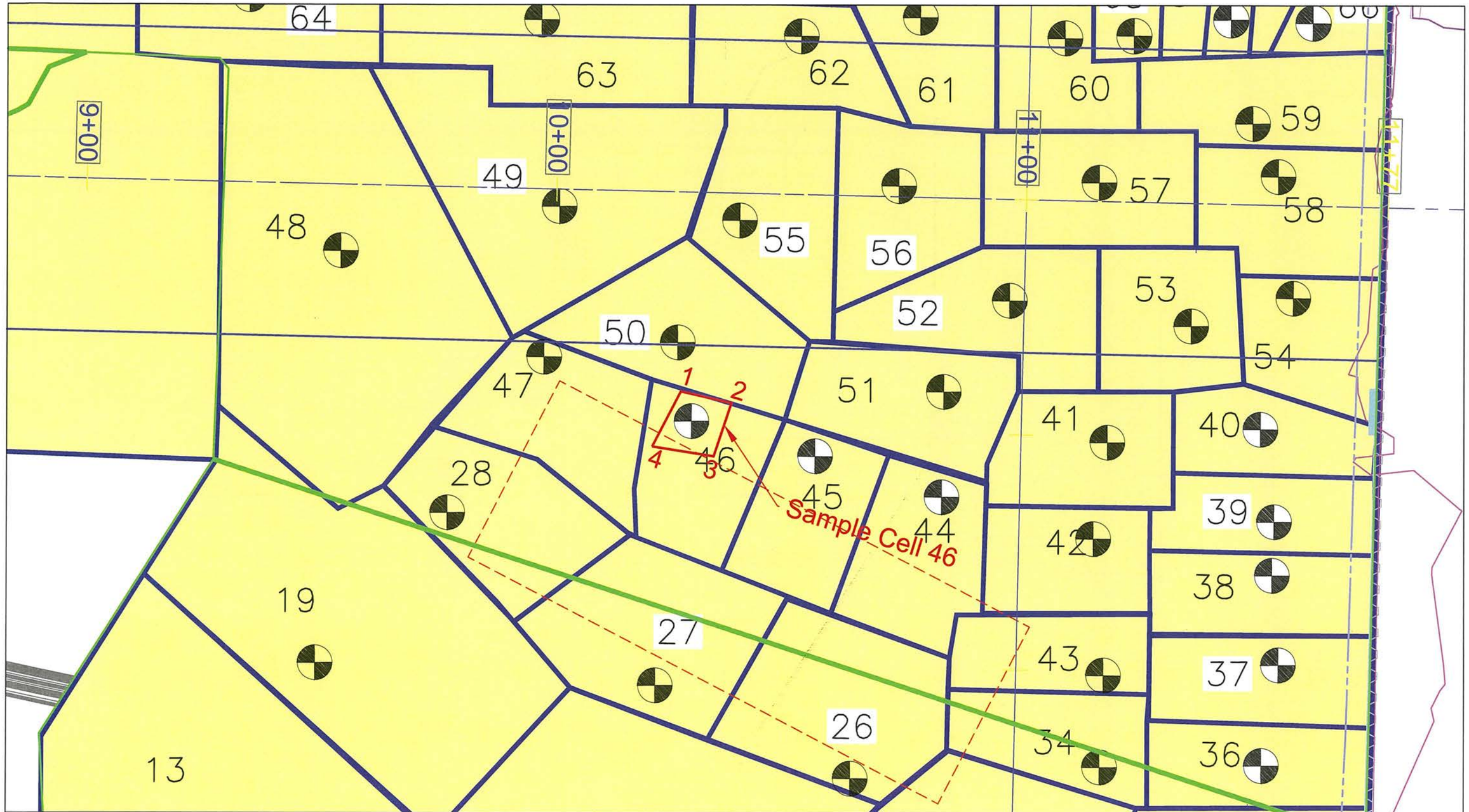
1. CHARTER SEPTEMBER 2017 SURVEY INCLUDED FOR MAIN CHANNEL – REMAINING AREAS SHOWN FROM DIGITIZED AMEC DRAWING SHEET C-102.
2. EACH SEDIMENT CORE LOCATION REPRESENTS 500 TONS OF SEDIMENT.

FIGURE 1
CHARTER CONTRACTING COMPANY, LLC
WYNN EVERETT

PRE-CHARACTERIZATION
SAMPLING GRID PLAN

SEPTEMBER 2017 SCALE: 1" = 50'

Weston & Sampson



LEGEND

Corner Label	Cell 46 Smple Locations
1	X=772273.84 Y=2968894.67
2	X=772281.78 Y=2968902.36
3	X=772289.23 Y=2968893.04
4	X=772280.35 Y=2968883.17

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

REVISIONS

DESCRIPTION	DATE

CHARTER CONTRACTING
500 Harrison Ave, Boston MA 02118
ENVIRONMENTAL ENGINEERING SERVICES
Phone: 857 246-6800 Fax: 857 246-6885

PROJECT
Wynn Casino Dredge Remediation
Mystic River, Everett, MA

TITLE/SURVEY TITLE
Cell 46 Coring Locations

SCALE: 1:20
DATE: October 31 2016
DPS JOB NO: 454
USACE JOB NO:
FILE NAME: Charter Cone Digital Trade.dwg
DESIGNED BY: T. LEWIS
APPROVED BY: T. LEWIS

PAGE
01

01

APPENDIX C
ASBESTOS LABORATORY TEST RESULTS

September 27, 2017

AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

CLIENT PROJECT: Wynn Sediment Remediation; 3651170065
CEI LAB CODE: A17-13718

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on September 27, 2017. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

AMEC Foster Wheeler

CLIENT PROJECT: Wynn Sediment Remediation; 3651170065

CEI LAB CODE: A17-13718

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 09/27/17

TOTAL SAMPLES ANALYZED: 84

SAMPLES >1% ASBESTOS:

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Wynn Sediment Remediation; 3651170065

CEI LAB CODE: A17-13718

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
SED-C-20		A2506497	Gray	Soil	None Detected
SED-C-48		A2506498	Black	Soil	None Detected
SED-C-25		A2506499	Black	Soil	None Detected
SED-C-23		A2506500	Gray	Soil	None Detected
SED-C-22		A2506501	Gray	Soil	None Detected
SED-C-13		A2506502	Gray	Soil	None Detected
SED-C-19		A2506503	Gray	Soil	None Detected
SED-C-28		A2506504	Gray	Soil	None Detected
SED-C-21		A2506505	Gray	Soil	None Detected
SED-C-18		A2506506	Gray	Soil	None Detected
SED-C-24		A2506507	Gray	Soil	None Detected
SED-C-17		A2506508	Gray	Soil	None Detected
SED-C-12		A2506509	Gray	Soil	None Detected
SED-C-15		A2506510	Gray	Soil	None Detected
SED-C-16		A2506511	Gray	Soil	None Detected
SED-C-49		A2506512	Gray	Soil	None Detected
SED-C-14		A2506513	Gray	Soil	None Detected
SED-C-50		A2506514	Gray	Soil	None Detected
SED-C-78		A2506515	Black	Soil	None Detected
SED-C-79		A2506516	Black	Soil	None Detected
SED-C-27		A2506517	Gray	Soil	None Detected
SED-C-26		A2506518	Gray	Soil	None Detected
SED-C-52		A2506519	Gray	Soil	None Detected
SED-C-56		A2506520	Black	Soil	None Detected
SED-C-55		A2506521	Black	Soil	None Detected
SED-C-64		A2506522	Gray	Soil	None Detected
SED-C-54		A2506523	Black	Soil	None Detected
SED-C-53		A2506524	Black	Soil	None Detected
SED-C-58		A2506525	Gray	Soil	None Detected
SED-C-59		A2506526	Gray	Soil	None Detected
SED-C-57		A2506527	Gray	Soil	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Wynn Sediment Remediation; 3651170065

CEI LAB CODE: A17-13718

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
SED-C-2		A2506528	Gray	Soil	None Detected
SED-C-4		A2506529	Gray	Soil	None Detected
SED-C-9		A2506530	Gray	Soil	None Detected
SED-C-6		A2506531	Gray	Soil	None Detected
SED-C-8		A2506532	Gray	Soil	None Detected
SED-C-11		A2506533	Gray	Soil	None Detected
SED-C-5		A2506534	Gray	Soil	None Detected
SED-C-7		A2506535	Gray	Soil	None Detected
SED-C-34		A2506536	Gray	Soil	None Detected
SED-C-43		A2506537	Gray	Soil	None Detected
SED-C-41		A2506538	Gray	Soil	None Detected
SED-C-42		A2506539	Gray	Soil	None Detected
SED-C-63		A2506540	Black,Gray	Soil	None Detected
SED-C-61		A2506541	Gray	Soil	None Detected
SED-C-62		A2506542	Gray	Soil	None Detected
SED-C-60		A2506543	Black,Gray	Soil	None Detected
SED-C-1		A2506544	Gray	Soil	None Detected
SED-C-3		A2506545	Gray	Soil	None Detected
SED-C-80		A2506546	Gray,Black	Soil	None Detected
SED-C-44		A2506547	Gray,Black	Soil	None Detected
SED-C-45		A2506548	Gray,Black	Soil	None Detected
SED-C-47		A2506549	Gray,Black	Soil	None Detected
SED-C-46		A2506550	Gray,Black	Soil	Chrysotile <1%
SED-C-35		A2506551	Gray,Black	Soil	None Detected
SED-C-37		A2506552	Gray,Black	Soil	None Detected
SED-C-36		A2506553	Gray,Black	Soil	None Detected
SED-C-66		A2506554	Gray,Black	Soil	None Detected
SED-C-69		A2506555	Gray,Black	Soil	None Detected
SED-C-68		A2506556	Brown,Black	Soil	None Detected
SED-C-77		A2506557	Gray	Soil	None Detected
SED-C-76		A2506558	Gray,Black	Soil	None Detected

Asbestos Report Summary

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PROJECT: Wynn Sediment Remediation; 3651170065

CEI LAB CODE: A17-13718

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
SED-C-75		A2506559	Gray	Soil	None Detected
SED-C-74		A2506560	Gray	Soil	None Detected
SED-C-73		A2506561	Brown,Black	Soil	None Detected
SED-C-72		A2506562	Gray,Black	Soil	None Detected
SED-C-93		A2506563	Gray	Soil	None Detected
SED-C-94		A2506564	Gray,Black	Soil	None Detected
SED-C-38		A2506565	Gray,Black	Soil	None Detected
SED-C-65		A2506566	Gray,Black	Soil	None Detected
SED-C-40		A2506567	Gray	Soil	None Detected
SED-C-39		A2506568	Gray	Soil	None Detected
SED-C-70		A2506569	Brown,Black	Soil	None Detected
SED-C-71		A2506570	Brown,Black	Soil	None Detected
SED-C-10		A2506571	Black	Soil	None Detected
SED-C-72-2		A2506572	Gray	Soil	None Detected
SED-C-70-2		A2506573	Brown,Black	Soil	None Detected
SED-C-69-2		A2506574	Black	Soil	None Detected
SED-C-71-2		A2506575	Black	Soil	None Detected
SED-C-65-2		A2506576	Black	Soil	None Detected
SED-C-68-2		A2506577	Black	Soil	None Detected
SED-C-67-2		A2506578	Black,Gray	Soil	None Detected
SED-C-66-2		A2506579	Black,Gray	Soil	None Detected
SED-C-51		A2506580	Black,Gray	Soil	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

CEI Lab Code: A17-13718
Date Received: 09-27-17
Date Analyzed: 09-27-17
Date Reported: 09-27-17

Project: Wynn Sediment Remediation; 3651170065

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-20 A2506497	Soil	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-48 A2506498	Soil	Heterogeneous Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-25 A2506499	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-23 A2506500	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-22 A2506501	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Talc	95%	Soil	None Detected
SED-C-13 A2506502	Soil	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-19 A2506503	Soil	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Soil	None Detected

ASBESTOS BULK ANALYSIS
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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-28 A2506504	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-21 A2506505	Soil	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-18 A2506506	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-24 A2506507	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-17 A2506508	Soil	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-12 A2506509	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-15 A2506510	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-16 A2506511	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-49 A2506512	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-14 A2506513	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-50 A2506514	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-78 A2506515	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-79 A2506516	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-27 A2506517	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected

ASBESTOS BULK ANALYSIS
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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-26 A2506518	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-52 A2506519	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-56 A2506520	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-55 A2506521	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-64 A2506522	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-54 A2506523	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-53 A2506524	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected

ASBESTOS BULK ANALYSIS
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Project: Wynn Sediment Remediation; 3651170065

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-58 A2506525	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
Lab Notes: Samples A2506525-A2506552 analyzed by Anna Malmberg							
SED-C-59 A2506526	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-57 A2506527	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-2 A2506528	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-4 A2506529	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-9 A2506530	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-6 A2506531	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-8 A2506532	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-11 A2506533	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-5 A2506534	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-7 A2506535	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-34 A2506536	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-43 A2506537	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-41 A2506538	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-42 A2506539	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-63 A2506540	Soil	Heterogeneous Black,Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-61 A2506541	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-62 A2506542	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-60 A2506543	Soil	Heterogeneous Black,Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-1 A2506544	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-3 A2506545	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected

ASBESTOS BULK ANALYSIS
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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-80 A2506546	Soil	Heterogeneous Gray,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-44 A2506547	Soil	Heterogeneous Gray,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-45 A2506548	Soil	Heterogeneous Gray,Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-47 A2506549	Soil	Heterogeneous Gray,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-46 A2506550	Soil	Heterogeneous Gray,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	<1% Chrysotile
SED-C-35 A2506551	Soil	Heterogeneous Gray,Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-37 A2506552	Soil	Heterogeneous Gray,Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-36 A2506553	Soil	Heterogeneous Gray,Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
Lab Notes: Samples A2506553-A2506580 analyzed by Greg Ruff.							
SED-C-66 A2506554	Soil	Heterogeneous Gray,Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-69 A2506555	Soil	Heterogeneous Gray,Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-68 A2506556	Soil	Heterogeneous Brown,Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-77 A2506557	Soil	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	100%	Soil	None Detected
SED-C-76 A2506558	Soil	Heterogeneous Gray,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-75 A2506559	Soil	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Soil	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-74 A2506560	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-73 A2506561	Soil	Heterogeneous Brown,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-72 A2506562	Soil	Heterogeneous Gray,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-93 A2506563	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-94 A2506564	Soil	Heterogeneous Gray,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95% <1%	Soil Metal Foil	None Detected
SED-C-38 A2506565	Soil	Heterogeneous Gray,Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-65 A2506566	Soil	Heterogeneous Gray,Black Fibrous Bound	5%	Cellulose	95%	Soil	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-40 A2506567	Soil	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-39 A2506568	Soil	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Soil	None Detected
SED-C-70 A2506569	Soil	Heterogeneous Brown,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-71 A2506570	Soil	Heterogeneous Brown,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-10 A2506571	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-72-2 A2506572	Soil	Heterogeneous Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-70-2 A2506573	Soil	Heterogeneous Brown,Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
SED-C-69-2 A2506574	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-71-2 A2506575	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-65-2 A2506576	Soil	Heterogeneous Black Fibrous Bound	5% <1% <1%	Cellulose Fiberglass Talc	95%	Soil	None Detected
SED-C-68-2 A2506577	Soil	Heterogeneous Black Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-67-2 A2506578	Soil	Heterogeneous Black,Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-66-2 A2506579	Soil	Heterogeneous Black,Gray Fibrous Bound	5% <1%	Cellulose Fiberglass	95%	Soil	None Detected
SED-C-51 A2506580	Soil	Heterogeneous Black,Gray Fibrous Bound	5% <1% <1%	Cellulose Fiberglass Talc	95%	Soil	None Detected

LEGEND:	Non-Anth	= Non-Asbestiform Anthophyllite
	Non-Trem	= Non-Asbestiform Tremolite
	Calc Carb	= Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

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ANALYST: Gary A. Swanson

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

Anna Malmberg

NVLAP TESTING
NVLAP LAB CODE 101768-0

(84) A7.13.718

ASBESTOS A2506497
CHAIN OF CUSTODY A2506580

CEI LABS

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LAB USE ONLY:
CEI Lab Code:
CEI Lab I.D. Range:

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Company: Amec Foster Wheeler	Email / Tel: matt.grove@amecfw.com
Address: 271 Mill Rd, 3rd Floor Chelmsford, MA 01824	Project Name: Wynn Sediment Remediation
	Project ID#: 3651170065
Email: matt.grove@amecfw.com	PO #:
Tel: 978-392-5398 Fax:	STATE SAMPLES COLLECTED IN: MA

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	24 HR	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☒	☐	☐	☐	☐
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PLM BULK	CARB 435		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM AIR	ISO 10312	☐	☐	☐	☐	☐	☐
TEM AIR	ASTM 6281-09	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☐
TEM DUST WIPE	ASTM D6480-05 (2010)	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09 (2014)	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-13			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS / SPECIAL INSTRUCTIONS:

☑ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
Katherine Mason/Charter		DC	9-27 9:50
			11:30

Samples will be disposed of 30 days after analysis

Page 1 *of* _____

Version: CCOC.01.17.1/2.LD

M7. 13.718

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Amec Foster Wheeler	Job Contact: Matt Grove
Project Name: Wynn Sediment Remediation	
Project ID #: 3651170065	Tel: 978-392-5398

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
SED-C-20	(0-2.3') / cell 20		PLM ☒	TEM ☐
SED-C-48	(0-3.2') / cell 48		PLM ☒	TEM ☐
SED-C-25	(0-3.3') / cell 25		PLM ☒	TEM ☐
SED-C-23	(0-1.9') / cell 23		PLM ☒	TEM ☐
SED-C-22	(0-1.2') / cell 22		PLM ☒	TEM ☐
SED-C-13	(0-2.9') / cell 13		PLM ☒	TEM ☐
SED-C-19	(0-3.0') / cell 19		PLM ☒	TEM ☐
SED-C-28	(0-2.7') / cell 28		PLM ☒	TEM ☐
SED-C-21	(0-2.6') / cell 21		PLM ☒	TEM ☐
SED-C-18	(0-1.0') / cell 18		PLM ☒	TEM ☐
SED-C-24	(0-2.0') / cell 24		PLM ☒	TEM ☐
SED-C-17	(0-3.0') / cell 17		PLM ☒	TEM ☐
SED-C-12	(0-1.8') / cell 12		PLM ☒	TEM ☐
SED-C-15	(0-1.9') / cell 15		PLM ☒	TEM ☐
SED-C-16	(0-3.1') / cell 16		PLM ☒	TEM ☐
SED-C-49	(0-2.5') / cell 49		PLM ☒	TEM ☐
SED-C-14	(0-2.8') / cell 14		PLM ☒	TEM ☐
SED-C-50	(0-6.0') / cell 50		PLM ☒	TEM ☐
SED-C-78	(0-3.0') / cell 78		PLM ☒	TEM ☐
SED-C-79	(0-2.6') / cell 79		PLM ☒	TEM ☐
SED-C-27	(0-5.6') / cell 27		PLM ☒	TEM ☐
SED-C-26	(0-6.0') / cell 26		PLM ☒	TEM ☐
SED-C-52	(0-6.3') / cell 52		PLM ☒	TEM ☐
SED-C-56	(0-5.2') / cell 56		PLM ☒	TEM ☐
SED-C-55	(0-5.9') / cell 55		PLM ☒	TEM ☐
SED-C-64	(0-3.8') / cell 64		PLM ☒	TEM ☐
SED-C-54	(0-7.6') / cell 54		PLM ☒	TEM ☐
SED-C-53	(0-6.5') / cell 53		PLM ☒	TEM ☐

11-15-718

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Amec Foster Wheeler	Job Contact: Matt Grove
Project Name: Wynn Sediment Remediation	
Project ID #: 3651170065	Tel: 978-392-5398

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST			
SED-C-58	(0-6.5') / cell 58		PLM	X	TEM	
SED-C-59	(0-6.9') / cell 59		PLM	X	TEM	
SED-C-57	(0-7.5') / cell 57		PLM	X	TEM	
SED-C-2	(0-2.0') / cell 2		PLM	X	TEM	
SED-C-4	(0-1.5') / cell 4		PLM	X	TEM	
SED-C-9	(0-1.5') / cell 9		PLM	X	TEM	
SED-C-6	(0-1.4') / cell 6		PLM	X	TEM	
SED-C-8	(0-1.3') / cell 8		PLM	X	TEM	
SED-C-11	(0-1.6') / cell 11		PLM	X	TEM	
SED-C-5	(0-1.6') / cell 5		PLM	X	TEM	
SED-C-7	(0-2.2') / cell 7		PLM	X	TEM	
SED-C-34	(0-8.0') / cell 34		PLM	X	TEM	
SED-C-43	(0-6.6') / cell 43		PLM	X	TEM	
SED-C-41	(0-7.0') / cell 41		PLM	X	TEM	
SED-C-42	(0-7.3') / cell 42		PLM	X	TEM	
SED-C-63	(0-3.7') / cell 63		PLM	X	TEM	
SED-C-61	(0-6.3') / cell 61		PLM	X	TEM	
SED-C-62	(0-5.8') / cell 62		PLM	X	TEM	
SED-C-60	(0-5.8') / cell 60		PLM	X	TEM	
SED-C-1	(0-1.5') / cell 1		PLM	X	TEM	
SED-C-3	(0-2.0') / cell 3		PLM	X	TEM	
SED-C-80	(0-2.0') / cell 80		PLM	X	TEM	
SED-C-44	(0-0.7') / cell 44		PLM	X	TEM	
SED-C-45	(0-7.9') / cell 45		PLM	X	TEM	
SED-C-47	(0-8.1') / cell 47		PLM	X	TEM	
SED-C-46	(0-8.0') / cell 46		PLM	X	TEM	
SED-C-35	(0-8.6') / cell 35		PLM	X	TEM	
SED-C-37	(0-7.9') / cell 37		PLM	X	TEM	

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Amec Foster Wheeler	Job Contact: Matt Grove
Project Name: Wynn Sediment Remediation	
Project ID #: 3651170065	Tel: 978-392-5398

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
SED-C-36	(0-9.5') / cell 36		PLM ☒	TEM ☐
SED-C-66	(0-10.3') / cell 66		PLM ☒	TEM ☐
SED-C-69	(0-3.9') / cell 69		PLM ☒	TEM ☐
SED-C-68	(0-3.1') / cell 68		PLM ☒	TEM ☐
SED-C-77	(0-6.4') / cell 77		PLM ☒	TEM ☐
SED-C-76	(0-7.7') / cell 76		PLM ☒	TEM ☐
SED-C-75	(0-2.1') / cell 75		PLM ☒	TEM ☐
SED-C-74	(0-5.7') / cell 74		PLM ☒	TEM ☐
SED-C-73	(0-1.7') / cell 73		PLM ☒	TEM ☐
SED-C-72	(0-1.9') / cell 72		PLM ☒	TEM ☐
SED-C-93	(0-3.3') / cell 93		PLM ☒	TEM ☐
SED-C-94	(0-5.6') / cell 94		PLM ☒	TEM ☐
SED-C-38	(0-8.9') / cell 38		PLM ☒	TEM ☐
SED-C-65	(0-7.0') / cell 65		PLM ☒	TEM ☐
SED-C-40	(0-8.9') / cell 40		PLM ☒	TEM ☐
SED-C-39	(0-9.8') / cell 39		PLM ☒	TEM ☐
SED-C-70	(0-2.8') / cell 70		PLM ☒	TEM ☐
SED-C-71	(0-1.7') / cell 71		PLM ☒	TEM ☐
SED-C-10	(0-2.9') / cell 10		PLM ☒	TEM ☐
SED-C-72-2	(0-3.1') / cell 72-2		PLM ☒	TEM ☐
SED-C-70-2	(0-1.0') / cell 70-2		PLM ☒	TEM ☐
SED-C-69-2	(0-4.0') / cell 69-2		PLM ☒	TEM ☐
SED-C-71-2	(0-1.9') / cell 71-2		PLM ☒	TEM ☐
SED-C-65-2	(0-3.5') / cell 65-2		PLM ☒	TEM ☐
SED-C-68-2	(0-5.3') / cell 68-2		PLM ☒	TEM ☐
SED-C-67-2	(0-3.5') / cell 67-2		PLM ☒	TEM ☐
SED-C-66-2	(0-5.3') / cell 66-2		PLM ☐	TEM ☐
SED-C-57	(0-5.5') / cell 57		PLM ☐	TEM ☐

October 20, 2017

AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

CLIENT PROJECT: Wynn Sediment Remediation; 3651170065
CEI LAB CODE: A17-14869

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on October 20, 2017. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

AMEC Foster Wheeler

CLIENT PROJECT: Wynn Sediment Remediation; 3651170065

CEI LAB CODE: A17-14869

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 10/20/17

TOTAL SAMPLES ANALYZED: 4

SAMPLES >1% ASBESTOS:

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Wynn Sediment Remediation; 3651170065

CEI LAB CODE: A17-14869

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
Cell 46-A1		A2524807	Gray,Black	Soil	None Detected
Cell 46-A2		A2524808	Gray,Black	Soil	None Detected
Cell 46-A3		A2524809	Gray,Black	Soil	None Detected
Cell 46-A4		A2524810	Gray,Black	Soil	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

CEI Lab Code: A17-14869
Date Received: 10-20-17
Date Analyzed: 10-20-17
Date Reported: 10-20-17

Project: Wynn Sediment Remediation; 3651170065

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Cell 46-A1 A2524807	Soil	Heterogeneous Gray,Black Non-fibrous Bound	<1%	Cellulose	100%	Soil	None Detected
Cell 46-A2 A2524808	Soil	Heterogeneous Gray,Black Non-fibrous Bound	<1%	Cellulose	100%	Soil	None Detected
Cell 46-A3 A2524809	Soil	Heterogeneous Gray,Black Non-fibrous Bound	<1%	Cellulose	100%	Soil	None Detected
Cell 46-A4 A2524810	Soil	Heterogeneous Gray,Black Non-fibrous Bound	<1%	Cellulose	100%	Soil	None Detected

LEGEND:	Non-Anth	= Non-Asbestiform Anthophyllite
	Non-Trem	= Non-Asbestiform Tremolite
	Calc Carb	= Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by CEI Labs, Inc. CEI Labs makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

ANALYST: Taylor B. Metcalf

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

(7) A17-14.86
A 2524807
A 2524815

ASBESTOS CHAIN OF CUSTODY

CEI LABS

730 SE Maynard Road, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:	
CEI Lab Code:	
CEI Lab I.D. Range:	

COMPANY INFORMATION	**PROJECT INFORMATION**
CEI CLIENT #:	Job Contact: Matt Grove
Company: Amec Foster Wheeler	Email / Tel: matt.grove@amecfw.com
Address: 271 Mill Rd, 3rd Floor Chelmsford, MA 01824	Project Name: Wynn Sediment Remediation
	Project ID#: 3651170065
Email: matt.grove@amecfw.com	PO #:
Tel: 978-392-5398 Fax:	**STATE SAMPLES COLLECTED IN:** MA

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

		TURN AROUND TIME					
ASBESTOS	**METHOD**	**4 HR**	**8 HR**	**24 HR**	**2 DAY**	**3 DAY**	**5 DAY**
PLM BULK	EPA 600	☐	☒	☐	☐	☐	☐
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PLM BULK	CARB 435		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM AIR	ISO 10312	☐	☐	☐	☐	☐	☐
TEM AIR	ASTM 6281-09	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☐
TEM DUST WIPE	ASTM D6480-05 (2010)	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09 (2014)	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-13			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS / SPECIAL INSTRUCTIONS:
Analyze samples A1 through A4 first and then call Matt Grove with verbal report.
Hold additional samples pending direction from Matt Grove.

☑ Accept Samples
☐ Reject Samples

Relinquished By:	**Date/Time**	**Received By:**	**Date/Time**
John Rai	10/19/17 1315	Jason Raimondi	AA 10 20 17 9:00
[signature]	10/19/17 1510	Fedex	

Samples will be disposed of 30 days after analysis

Page _____ of _____

Version: CCOC.01.17.1/2.LD

A12-14-869

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Amec Foster Wheeler	Job Contact: Matt Grove
Project Name: Wynn Sediment Remediation	
Project ID #: 3651170065	Tel: 978-392-5398

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
Cell 46-A1			PLM ☒	TEM ☐
Cell 46-A2			PLM ☒	TEM ☐
Cell 46-A3			PLM ☒	TEM ☐
Cell 46-A4			PLM ☒	TEM ☐
Cell46-B1	Hold		PLM ☒	TEM ☐
Cell46-B2	Hold		PLM ☒	TEM ☐
Cell46-B3	Hold		PLM ☒	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
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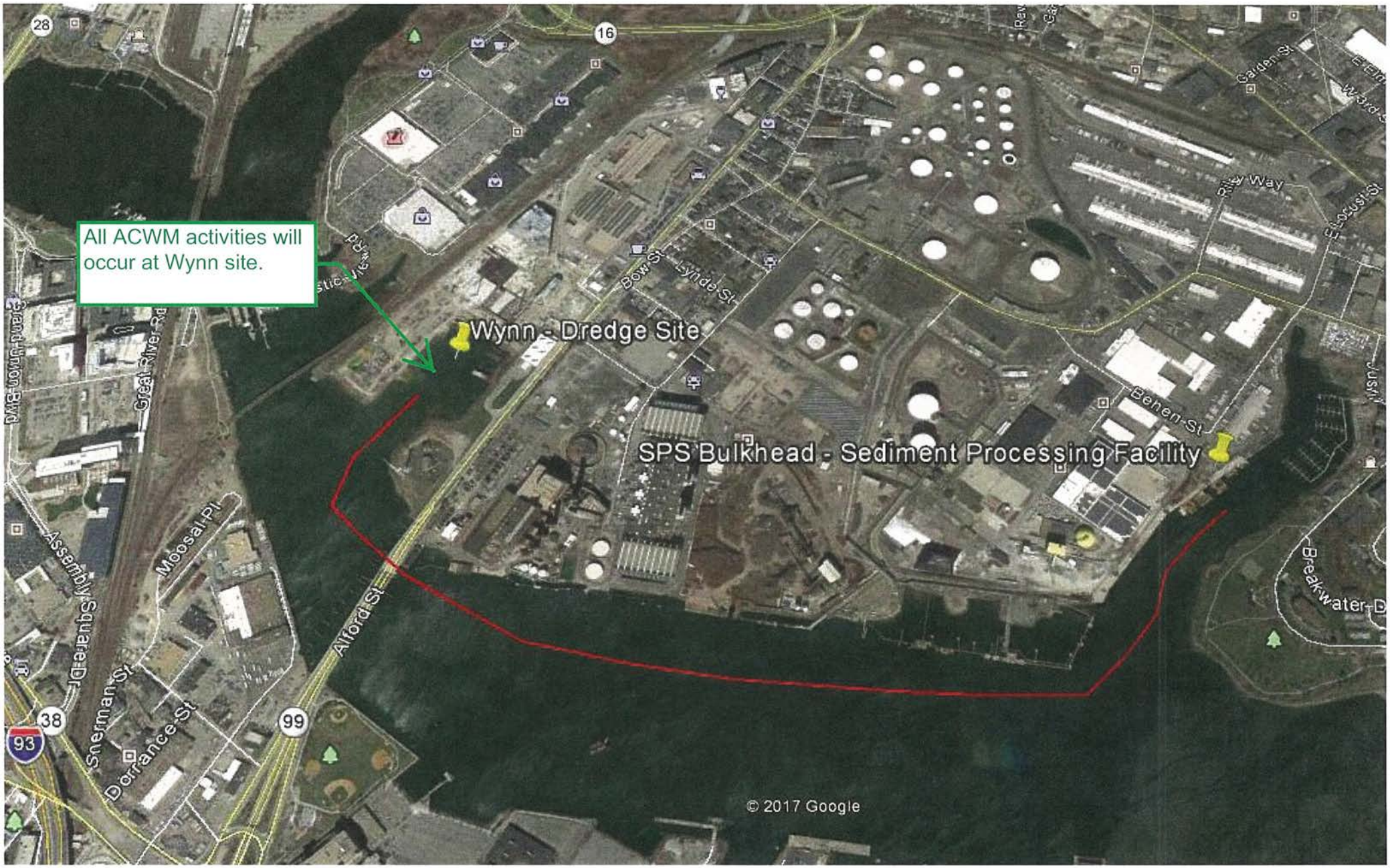
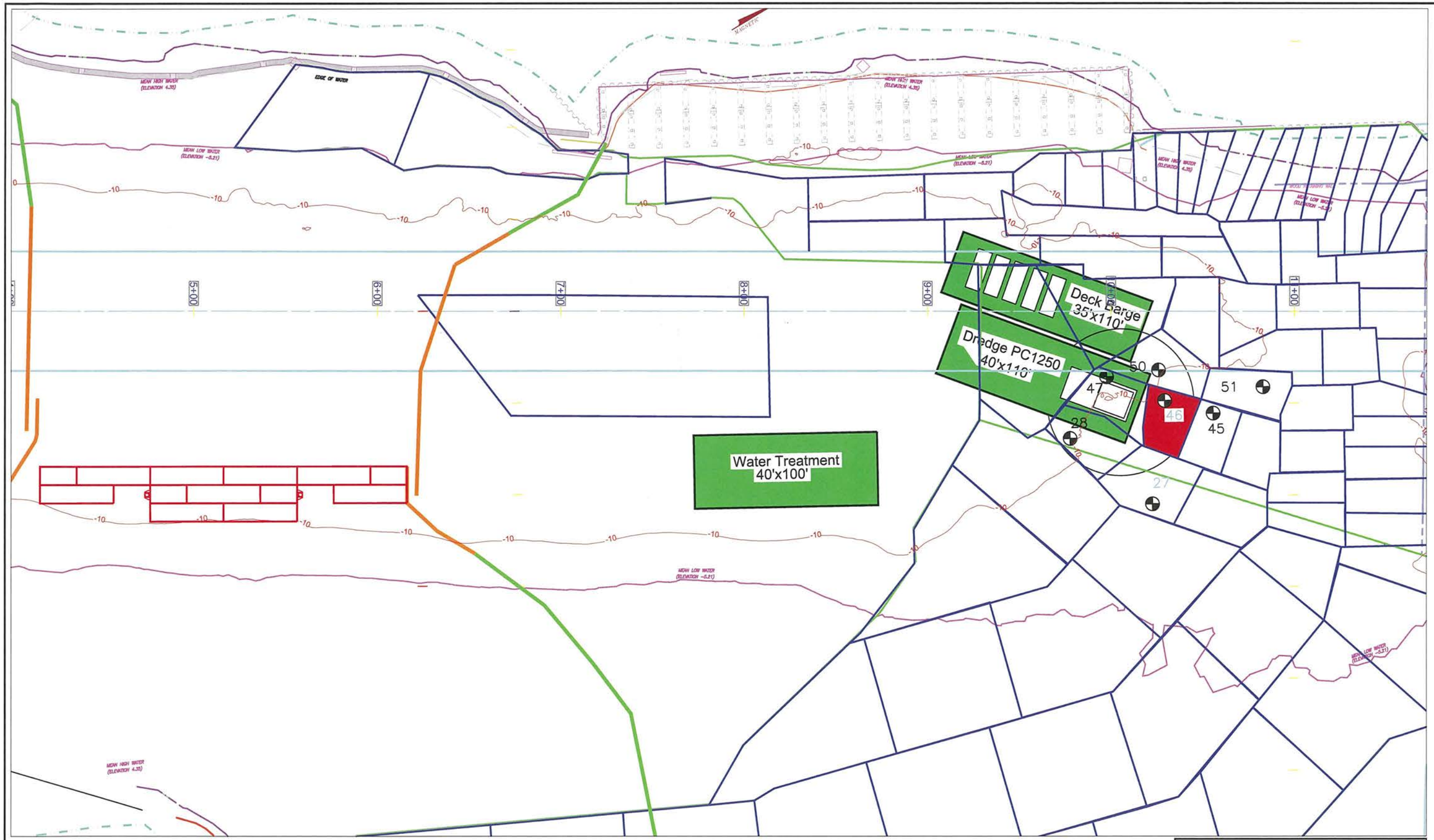
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐

Page _____ of _____

APPENDIX D
SITE LOCUS PLAN


All ACWM activities will occur at Wynn site.
Wynn - Dredge Site
SPS Bulkhead - Sediment Processing Facility
Bow St
Lynde St
Garden St
Riley Way
Behen St
Alford St
Moosal Pl
Assembly Square Dr
Sherman St
Dorrance St
Great Silver Rd
Breakwater
28
16
38
93
99
© 2017 Google

APPENDIX E
SITE OPERATION PLANS



GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

PROJECT DETAILS	
HORIZONTAL DATUM:	NAVD83
LOCAL GRID:	MA- Mainland
VERTICAL DATUM:	NAVD88
UNITS HORIZ. / VERT.:	FT/FT
SURVEY/PROJ. CONTROL POINT:	X=
	Y=
	Z=
SURVEY/PROJ. BENCH MARK:	X=
	Y=
	Z=
TIDE STAFF LOCATION:	

Charter Contracting Company, LLC
500 Harrison Avenue Suite 4R Boston MA 02118
Phone: 857 246-6800 www.charter.us

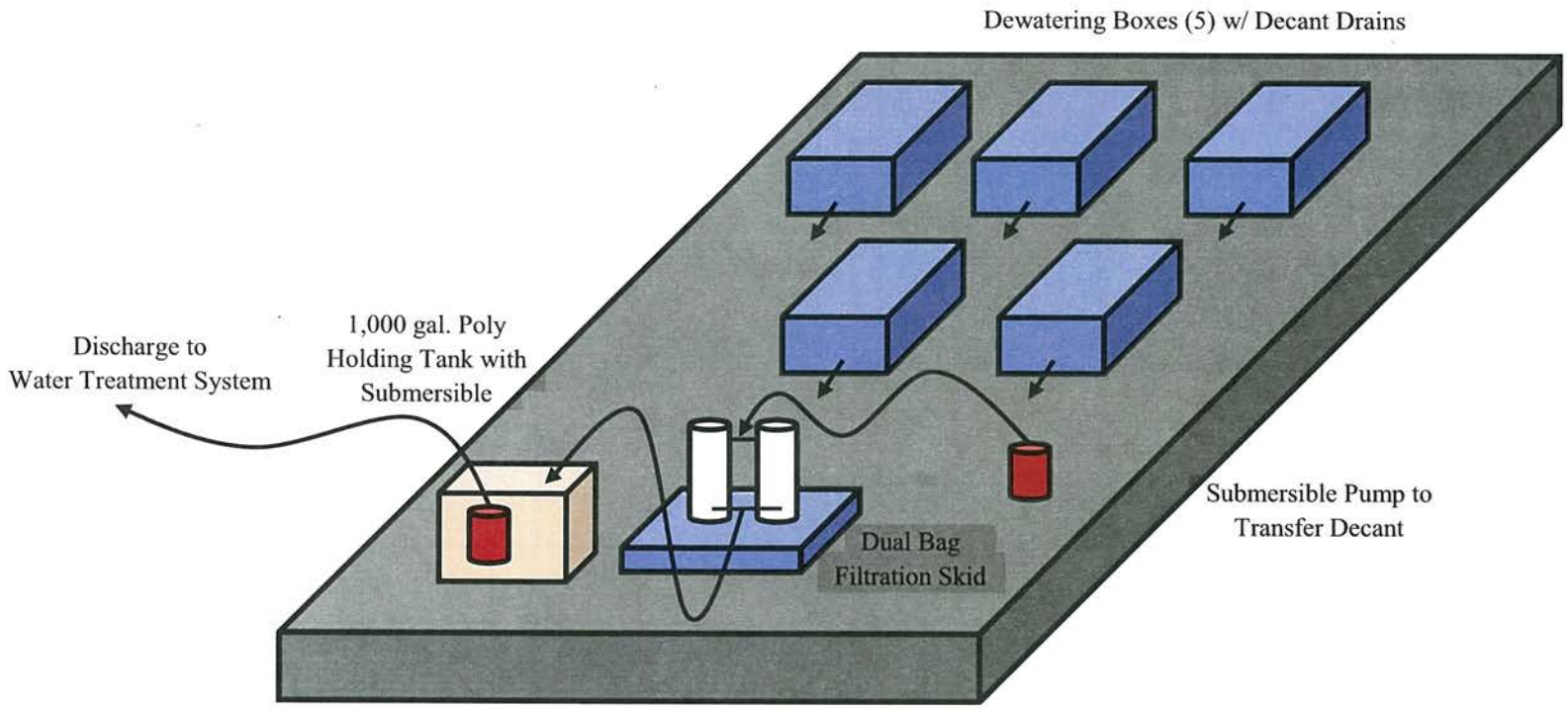
PROJECT: Wynn Boston Harbor Sediment Remediation
Everett, MA

DRAWING TITLE: Dredge Area Layout - Cell 46

SCALE:	1:50
DATE:	
CHARTER JOB NO:	2-1627
Client Project No.	RTN 3-13341
FILE NAME:	
DESIGNED BY:	KM
APPROVED BY:	

PAGE 01 OF 01 PAGES

APPENDIX F
DEWATERING BOX DETAILS



Notes

1. Figure is not to scale.
2. 5 micron Filter will be used on barge

LRT
Lockwood Remediation Technologies LLC

89 Crawford Street
Leominster, Massachusetts 01453
Tel: 774.450.7177
Fax: 888.835.0617
www.lrt-llc.net

Dewatering Box Layout
Wynn Dredge
Everett, Massachusetts

Bolted-in perforated basket for easy removal

25 Yard Dewatering Box

with Steel Hard Top

(Available in select locations)

Capacity: 25 yd
Height: 6' 6"
Width: 8' 6"
Length: 23'
Tare Weight: 9,000 lbs

All sizes are approximate

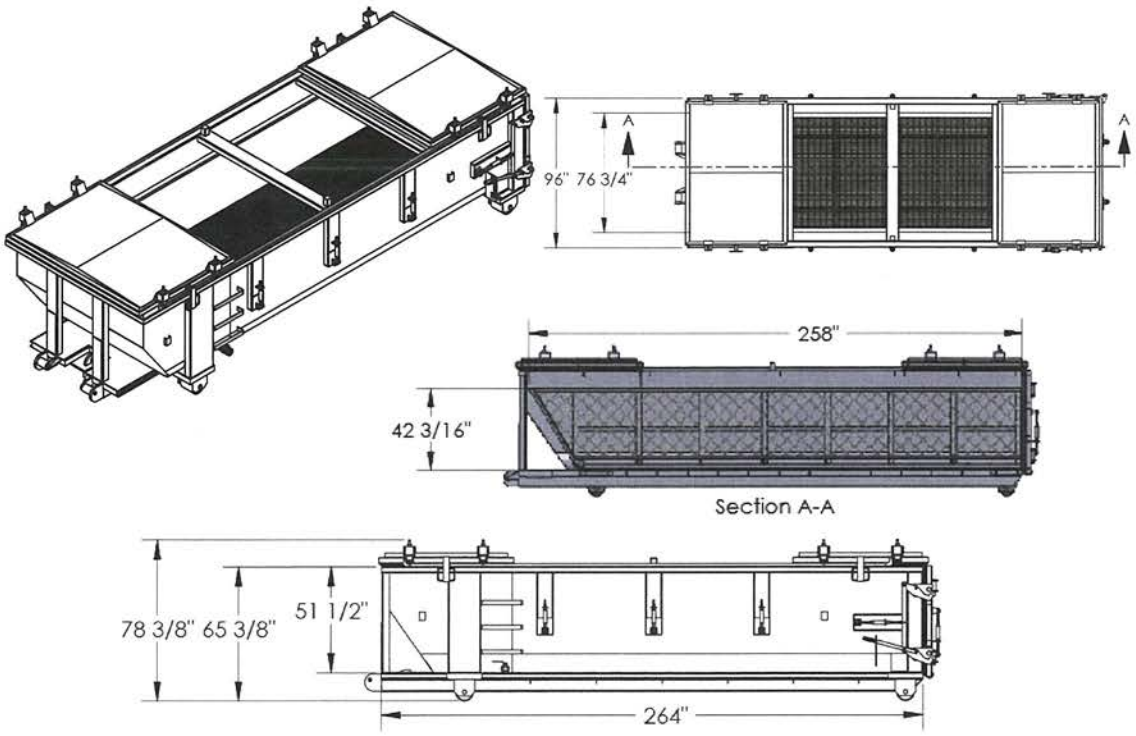
At Adler Tank Rentals, we are committed to providing safe and reliable containment solutions for all types of applications where performance matters.

Fitted with a bolted-in, easily removed perforated basket, the 25 Yard Dewatering Box with Steel Hard Top is designed for convenient use and easy cleaning. Featuring a fully gasketed waterproof door, valved drains and a variety of fabric filter liner options, this product is topped with a hard steel top to protect the contents from unwanted debris, precipitation and visibility.

Mechanical Features

- Sliding split roof lid equipped with ratcheting binders to lock in place
- 4" Drains
- Standard roll-off container with hard steel top
- Horizontal swinging, fully gasketed, watertight door with no crossbar to trap debris when dumping
- Bolted-in perforated basket for easy removal to assist in cleaning
- Compatible with standard roll-off frame truck
- Watertight gasketed rear door

25 Yard Dewatering Box with Steel Hard Top



Options

- Nominal 100 micron geotextile fabric filter liners, individually packaged and fitted for rapid installation
- 250 micron synthetic fabric filter liners, individually packaged and fitted for rapid installation
- 400 micron synthetic fabric filter liners, individually packaged and fitted for rapid installation

Comprehensive Service

Adler Tank Rentals provides containment solutions for hazardous and non-hazardous liquids and solids. We offer 24-hour emergency service, expert planning assistance, transportation, repair and cleaning services. All of our rental equipment is serviced by experienced Adler technicians and tested to exceed even the most stringent industry standards.

ADLER TANK RENTALS

800-421-7471 www.adlertankrentals.com

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APPENDIX G
WATER TREATMENT SYSTEM DESCRIPTION

NOTE: All water pumped from ACWM bins and/or used for ACWM decontamination will pass through a 5-micron filter before being treated with the system described below.

Description of Water Treatment System

All water generated from the dredge will be routed to the water treatment system located on a barge adjacent to the hopper barge. The anticipated wastewater will derive from the mechanical dredging decant. During dredging activities, the contractor will pump the decanted water from the hopper barge to the treatment system. The maximum influent flow rate will not exceed 250 gallons per minute (gpm). The primary contaminants of concern in the waste stream include total suspended solids (TSS), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs).

The treatment system is capable of treating a waste stream of up to 250 gpm and begins with two (2) 18,000-gallon weir tanks in parallel. Water in the weir tanks will flow, via gravity, into two (2) 10,000-gallon clarifiers in parallel. Two chemical additions; LRT-E-50 Coagulant and LRT-800 Series Flocculant will be added to aid in the settling process. The coagulant will be injected into the influent stream prior to entering the weir tanks for rapid mixing while the flocculant will be injected into the weir tanks for a slow mixing. The weir tanks will be raised 12 inches to allow for gravity flow into the clarifiers that contain baffles and settling tube media. The sediment will collect in the baffles and will be pumped out through the manifolds located on each side of the tanks. From the clarifier, a centrifugal pump will transfer water through a bag filter manifold with two (2) multi bag filter vessels plumbed in parallel such that one bag filter vessel (containing six (6) No. 2 bag filters) can operate while the other remains in standby. During a bag filter change out, one vessel is removed from service while one remains in operation so that water treatment never needs to be shut down. Each bag filter housing includes isolation valves, sample ports, and pressure gauges on the influent and effluent piping so that it is clear when a bag filter changeout is required. The maximum flow rate through the specified bag filters is 500 gpm and 125 pounds per square inch (PSI).

From the bag filters, water is discharged to one (1) zeolite vessel (10,000 lbs.) and two (2) parallel trains each containing two (2) liquid phase carbon vessels (3,000 lbs.) in series. There will be a total of one (1) zeolite vessel and four (4) carbon vessels. The zeolite vessel is rated for a maximum flowrate of 300 gpm and 75 PSI while the liquid phase carbon vessels are rated for a maximum flow rate of 200 gpm and 75 PSI. Following the carbon vessels will be one (1) flow meter/totalizer. Effluent water will be discharged to the embayment, inside a fully enclosed area surrounded by a turbidity curtain, also known as the "work area".

The system components will be connected using a combination of rubber suction hose and SCH40/SCH80 PVC piping. The connection from the weir tanks to the clarifiers will be made primarily with 6-inch/4-inch hard pipe. With the exception of the weir tanks and clarifiers, the treatment system will be enclosed in a wooden structure approximately 45 feet long, 8 feet wide and 12.5 feet tall. This enclosure will be heated and provided with lighting. In addition, tank heaters will be placed in the weir tanks.

Spill containments will be under all the tanks and the treatment system. Containment areas will be pumped down daily or as needed and the water from the spills or rain will be pumped into the weir tanks for treatment.

LEAD BASED PAINT - ASBESTOS - MOLD
LBP SOLUTIONS

DAILY SITE LOG

Date: 12/20/17	Project #: J170204
Client: Amec Foster Wheeler (Amec)	Site Location: 1 Horizon Way, Everett, MA
Work Area(s): Boston Harbor, Grid 46 – Barges	Shift Times: 0900 – 1600
Project Monitor: Mark Jacobs (MJ)	Certification #: AM900522
Contractor: Charter Contracting Company, LLC (CCC)	Supervisor: Edward Price (EP)

TIME	SITE NOTES / COMMENTS
0800	MJ of LBP Solutions, LLC (LBP) arrives onsite at SPS New England, Inc (SPS)
	dock area to review the NT Plan for the dredging of approx. 25cy
	of ACWM sediment from Grid 46 from the harbor.
0808	MJ speaks with Matt Grove (MG) of Amec to get SPS contact
	onsite.
0836	MJ speaks with Katherine of Charter in the trailer and she
	will be informing the proper people LBP is onsite and ready to setup
	the 4-point PCM air Monitoring.
0847	MJ loads boat with equipment and is ready to leave for Grid 46
	work area.
0921	Still waiting on boat for another CCC crew member before leaving
	for work area.
0936	MJ informs MG of the delay.
0955	Boat leaves SPS area for the barges at Grid 46 with LBP and Charter.
1009	Boat arrives at Grid 46 work area and board the dredge barge.
	MJ speaks with John Rice (JR) the Onsite Engineer for Amec to
	review the NT Plan. Charter has to adjust the position of the

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacobs

Daily Site Log, Continued

TIME	SITE NOTES / COMMENTS
	dredge barge and the deck barge that holds the roll off dewatering boxes. Roll offs are equiped with 5micron filters and are placed on poly with a perimeter berm covering the deck barge and preventing ACWM sediment and contaminated water from falling back into the harbor. Charter has to wait for another barge not associated with NT Plan to move before they can position barges to begin work. Could take over 1 hour.
1022	Charter begins lining the roll offs.
1124	MJ speaks with EP and Charter crew has finished lining the roll offs and have started to adjust both barges around Grid 46 to begin remediation utilizing an excavator with a dredge attachment.
1144	MJ calibrates the HV pumps for the 4-Point Monitoring at 6.15LPM. 2 pumps on dredge barge and 2 pumps on deck barge.
1153	Charter putting up the asbestos tape on both barges to create the exclusion zones. Charter is putting up proper signage on roll offs and checking all the roll offs and water pump are equiped with 5micron filter and are functioning.
1213	Stephanie Davenhauer (SD) the Project Cordinator for Wynn is onsite. EP holds pre-remediation meeting with Charter, LBP, Wynn, and SPS workers to review work plan and final safety checks. Work on hold waiting for charter worker to arrive at barge
1241	Charter worker arrives onsite and crew readies for remediation.
1257	Excavator begins dredging Grid 46 ACWM sediment into roll offs.

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Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacob

Daily Site Log, Continued

TIME	SITE NOTES / COMMENTS
1331	Excavator continuing to dredge Grid 46. All Charter's workers in the regulated area are wearing proper PPE and are utilizing the procedures in the NT Plan to keep down dust and contamination.
1348	Charter has finished dredging the approx. 25 CY of ACWM sediment from Grid 46 and they decontaminate the dredge attachment of the excavator.
1359	Charter sealing and labeling the liners of the roll offs.
1413	MJ post calibrates the 4 HV pumps for the 4-point monitoring at 6.15LPM.
1427	Charter is decanning the deck barge.
1433	MJ speaks with EP and the roll offs will remain on the barge for 24hrs to dewater. NO clearance for deck barge.
1441	Charter is taking up the last section of poly and berm and loading into the last roll off before its sealed. All workers wearing proper PPE.
1514	Charter finishes cleaning up berm and poly.
1523	LBP, Charter, and Wynn are picked up by boat and go back to SPS area.
1545	MJ speaks with EP, SD, and others about the process of disposal if sediment in roll offs passes/fails saturation test. Charter will notify Amec when LBP will be needed back out onsite for the final clearance of the deck barge and roll offs.
1600	MJ leaves worksite

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacob

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

Date: 12/20/17

Project: J170204 **Contractor:** Charter Contracting Company, LLC

Site Address: 1 Horizon Way, Everett, MA

Work Area: Dredge Barge

Asbestos Abatement Activities:
Charter Utilized water and filter system with 5 micron filter to decontaminate Dredge barge, Dredge bucket, and filter skid.

Visual Inspection Checklist:

- [x] All non-essential equipment removed from the work area.
- [x] All asbestos containing waste material removed from the work area
- [x] Asbestos waste containers/bags properly sealed and labeled
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [ ] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris N/A
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris
- [ ] Interior polyethylene walls free and clear of all visible debris N/A
- [ ] Interior polyethylene floors free and clear of all visible debris N/A

Abated surfaces: (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other Decontamination

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Edward Price

Disclaimer: The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

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LBP SOLUTIONS

Asbestos Air Sampling
Chain of Custody

PCM NIOSH 7400 Method (Issue 2: Dated 8/15/1994)

MA - AA000238 RI - AAL130

LBP Solutions, LLC
13 Bird St, Suite 6
Foxboro, MA 02035
844-527-5323

Client Name: Amec Foster Wheeler	Project #: J170204	Pass HSE Test Slide: yes
Project Location: 1 Horizon Way, Everett, MA	Microscope #: Nikon Alpha phot-YS2	Graticule Field Area: .00785
Collection Date: 12/20/17	Rotometer #: HF-03 Date Calibrated: 9/27/17	Phase Rings Aligned: yes

Sample ID#	Location / Worker / Task	Sample Type	Flow Rate Start	Flow Rate End	Flow Rate Ave	Time (24 hour) On	Time (24 hour) Off	Total Time	Total Volume	Fibers/ Fields	Fibers/ mm²	Fibers/ CC
01	Blank	10								Ø/100	Ø	0
02	Blank	10								Ø/100	Ø	Ø
03	Deck Barge NE	1	6.15	6.15	6.15	1144	1407	143	879	1.5/100	1.9108	.0008
04	↓ SE	1	6.15	6.15	6.15	1146	1408	142	873	1/100	1.2738	.0005
05	Dredge PC1250 S	1	6.15	6.15	6.15	1147	1411	144	885	Ø/100	Ø	Ø
06	↓ SW	1	6.15	6.15	6.15	1150	1413	143	879	Ø/100	Ø	Ø

Sampled By:	Transported By:	Received By:	Prepared By:	Analyzed By:
Name: Mark Jacobs	Name:	Name:	Name:	Name:
Signature: Mark Jacobs	Signature:	Signature:	Signature:	Signature:
Date: 12/20/17	Date:	Date:	Date:	Date:

Sample Type: 1.) Background 2.) Pre-Abatement 3.) Asbestos Abatement 4.) Final Cleaning 5.) Glove Bags 6.) Personals 7.) Final Air Clearance 8.) Waste Load Out 9.) Other Work 10.) Blank

Comments:

January 10, 2018

Mr. Matt Grove
Senior Project Manager
Amec Foster Wheeler Environment & Infrastructure, Inc.
271 Mill Road
Chelmsford, MA 01824

Final Visual Inspection

Grid 46 Remediation and Dredge Barge Decontamination
1 Horizon Way
Everett, MA 02149

Dear Mr. Matt Grove,

On December 20, 2017, LBP Solutions, LLC (LBP) performed a visual inspection to determine the completion of asbestos remediation and decontamination activities. Remediation activities involved the removal of asbestos containing material and sediment from Grid 46 and the decontamination of dredge barge. Charter Contracting Company INC. Massachusetts Department of Labor Standards License # AC000877 conducted the redemiation utilizing an excavator with a dredge bucket and then utilized hand tools to decontaminate the dredge barge and dredge bucket. Upon visual inspection of the work area, no evidence of visible debris was observed. Mr. Mark Jacobs of LBP, Massachusetts Department of Labor Standards License # AM900522, performed the visual inspection.

A copy of the visual inspection log is also attached.

LBP would like to thank you for the opportunity to have serviced Mr. Matt Grove's environmental testing needs. If you have any questions regarding the completed testing, please don't hesitate to call.

Sincerely,

Mark Jacobs

Mark Jacobs
Project Manager

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

Date: 12/20/17

Project: J170204 **Contractor:** Charter Contracting Company, LLC

Site Address: 1 Horizon Way, Everett, MA

Work Area: Dredge Barge

Asbestos Abatement Activities:
Charter Utilized water and filter system with 5 micron filter to decontaminate Dredge barge, Dredge bucket, and filter skid.

Visual Inspection Checklist:

- [x] All non-essential equipment removed from the work area.
- [x] All asbestos containing waste material removed from the work area
- [x] Asbestos waste containers/bags properly sealed and labeled
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [ ] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris N/A
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris
- [ ] Interior polyethylene walls free and clear of all visible debris N/A
- [ ] Interior polyethylene floors free and clear of all visible debris N/A

Abated surfaces: (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other Decontamination

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Edward Price

Disclaimer: The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

INSTITUTE FOR ENVIRONMENTAL EDUCATION

This is to certify that

Mark J. Jacobs

has completed the requisite training, and has passed an examination for reaccreditation

Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

LBP Solutions
13 Bird Street Suite 6 Foxboro, MA 02035

July 3, 2017
Course Dates

17-0971-174-261380
Certificate Number

July 03, 2017
Examination Date

July 03, 2018
Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887 Telephone 978.658.5272 www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

Date: 1/23/18

Project: J170204

Contractor: Charter Contracting Company, LLC

Site Address: 1 Horizon Way, Everett, MA

Work Area: Deck barge - 2 Roll offs ACWM dumpsters

Asbestos Abatement Activities:
Crew Utilized hand tools, power tools and pressure washer to decontaminate the 2 roll off ACWM dumpsters.

Visual Inspection Checklist:

- [x] All non-essential equipment removed from the work area.
- [x] All asbestos containing waste material removed from the work area
- [x] Asbestos waste containers/bags properly sealed and labeled
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [ ] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris N/A
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris
- [ ] Interior polyethylene walls free and clear of all visible debris N/A
- [ ] Interior polyethylene floors free and clear of all visible debris N/A

Abated surfaces: (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other Decontamination

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Matt McCabe

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LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

Asbestos Air Sampling
Chain of Custody

PCM NIOSH 7400 Method (Issue 2: Dated 8/15/1994)

MA - AA000238 RI - AAL130

LBP Solutions, LLC
13 Bird St, Suite 6
Foxboro, MA 02035
844-527-5323

Client Name: Amec Foster Wheeler	Project #: J170204	Pass HSE Test Slide: yes
Project Location: 1 Horizon Way, Everett, MA	Microscope #: Nikon Alphaphot-YS2	Graticule Field Area: .00785
Collection Date: 1/23/18	Rotometer #: HF-03 Date Calibrated: 9/27/17	Phase Rings Aligned: yes

Sample ID#	Location / Worker / Task	Sample Type	Flow Rate Start	Flow Rate End	Flow Rate Ave	Time (24 hour) On	Time (24 hour) Off	Total Time	Total Volume	Fibers/ Fields	Fibers/ mm²	Fibers/ CC
01	Blank	10	→					→	→	Ø/100	Ø	Ø
02	Blank	10	→					→	→	Ø/100	Ø	Ø
03	Deck Barge, Roll offs - N	1	7.13	7.13	7.13	0909	1248	219	1,561	1.5/100	1.9108	.0004
04	↓ ↓ - NW	1	7.13	* →		0911	* →					→
05	↓ ↓ - S	1	7.13	7.13	7.13	0913	1251	218	1,554	Ø/100	Ø	Ø
06	↓ ↓ - E	1	7.13	7.13	7.13	0914	1252	218	1,554	* →		→
07	Deck Barge, Roll offs - N	1	7.13	7.13	7.13	1248	1422	94	670	* →		→
08	↓ ↓ - NW	1	7.13	* →		1249	* →					→
09	↓ ↓ - S	1	7.13	7.13	7.13	1251	1426	95	677	2.5/100	3.1847	.0018
10	↓ ↓ - E	1	7.13	7.13	7.13	1252	1428	96	684	Ø/100	Ø	Ø

Sampled By:	Transported By:	Received By:	Prepared By:	Analyzed By:
Name: Mark Jacobs	Name:	Name:	Name:	Name:
Signature: Mark Jacobs	Signature:	Signature:	Signature:	Signature:
Date: 1/23/18	Date:	Date:	Date:	Date:

Sample Type: 1.) Background 2.) Pre-Abatement 3.) Asbestos Abatement 4.) Final Cleaning 5.) Glove Bags 6.) Personals 7.) Final Air Clearance 8.) Waste Load Out 9.) Other Work 10.) Blank

Comments: Samples 04 and 08 — Power to HV pump Tripped off do to Sever rain.
Samples 06 and 07 — Samples were damaged by Sever rain/wind, can't read.

January 26, 2018

Mr. Matt Grove
Senior Project Manager
Amec Foster Wheeler Environment & Infrastructure, Inc.
271 Mill Road
Chelmsford, MA 01824

Final Visual Inspection

Deck Barge and Roll Offs - Decontamination
1 Horizon Way
Everett, MA 02149

Dear Mr. Matt Grove,

On January 23, 2018, LBP Solutions, LLC (LBP) performed a visual inspection to determine the completion of asbestos decontamination activities. Decontamination activities involved the removal of asbestos contaminated sediment from the two roll offs and deck barge. Charter Contracting Company INC. Massachusetts Department of Labor Standards License # AC000877 conducted the decontamination utilizing hand tools, power tools, and pressure washer to decontaminate the deck barge and two roll offs. Upon visual inspection of the work area, no evidence of visible debris was observed. Mr. Mark Jacobs of LBP, Massachusetts Department of Labor Standards License # AM900522, performed the visual inspection.

A copy of the visual inspection log is also attached.

LBP would like to thank you for the opportunity to have serviced Mr. Matt Grove's environmental testing needs. If you have any questions regarding the completed testing, please don't hesitate to call.

Sincerely,

Mark Jacobs

Mark Jacobs
Project Manager

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

Date: 1/23/18

Project: J170204

Contractor: Charter Contracting Company, LLC

Site Address: 1 Horizon Way, Everett, MA

Work Area: Deck barge - 2 Roll offs ACWM dumpsters

Asbestos Abatement Activities:
Crew Utilized hand tools, power tools and pressure washer to decontaminate the 2 roll off ACWM dumpsters.

Visual Inspection Checklist:

- [x] All non-essential equipment removed from the work area.
- [x] All asbestos containing waste material removed from the work area
- [x] Asbestos waste containers/bags properly sealed and labeled
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [ ] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris N/A
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris
- [ ] Interior polyethylene walls free and clear of all visible debris N/A
- [ ] Interior polyethylene floors free and clear of all visible debris N/A

Abated surfaces: (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other Decontamination

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Matt McCabe

Disclaimer: The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

INSTITUTE FOR ENVIRONMENTAL EDUCATION

This is to certify that

Mark J. Jacobs

has completed the requisite training, and has passed an examination for reaccreditation

Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

LBP Solutions
13 Bird Street Suite 6 Foxboro, MA 02035

July 3, 2017
Course Dates

17-0971-174-261380
Certificate Number

July 03, 2017
Examination Date

July 03, 2018
Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887 Telephone 978.658.5272 www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION

Charter

Name:	21627 Wynn (SPS)					
Facility:	Crossroads Norridgewock, ME					
Date:	01.02.18 (Picked up on 12.29.17)					
Approval:	523415ME					
Date	Ld	Truck Name	#		Ticket	Tons
01.02.18	1	SWS	503		914169	4.73
01.02.18	2	SWS	506		914173	1.82
01.02.18	2	Z Total				6.55

WASTE MANAGEMENT

WM Disp Services of Maine
357 Mercer Rd
Norridgewock, ME, 04957
Ph: (207) 634-2714

Original 1621599

Ticket# 914169

Customer Name	CHARTERCONTRACTING CHARTER	Carrier	NRES NON-RESIDENT		
Ticket Date	01/02/2018	Vehicle#	SHIPYARD503	Volume	
Payment Type	Credit Account	Container			
Manual Ticket#		Driver			
Hauling Ticket#		Check#			
Route		Billing #	0113697		
State Waste Code		Gen EPA ID	NOT REQUIRED		
Manifest	53630	PO			
Destination	PH8	Profile	523415ME (ASBESTOS CONTAMINATED SE		
Grid	M42	Generator	NE-WYNNMALLC WYNN MA, LLC		

	Time	Scale	Operator	Inbound		
In	01/02/2018 08:01:21	Scale1 Inboun	1files		Gross	49680 lb
Out	01/02/2018 09:38:23	Scale 2 Out	1files		Tare	40220 lb
					Net	9460 lb
					Tons	4.73

Comments

	Product	LD%	QTY	UOM	Rate	Fee	Amount	Origin
1	Asb Non Fri-Tons-A	100	4.73	Tons				MA
2	EVF-P14-Environmen	100		%				
3	RCR-P-Regulatory C	100		%				
4	LFS4-LANDFILL FIXE	100		%				

Total Fees
Total Ticket

OUT-OF-STATE SOLID WASTE TRANSPORTER DECLARATION: I certify under penalty of perjury that the information provided is true and correct to the best of my knowledge and belief.
TO THE BEST OF MY KNOWLEDGE THIS TRUCK CONTAINS NO HAZARDUS OR UNACCEPTABLE WASTE.

Driver's Signature _____

404WM-N

503

WASTE SHIPMENT RECORD/ASBESTOS MANIFEST

(See Reverse for Instructions)

For Disposal Site Use Only

Elevation_____

North_____ East_____

Generator

1-A. Special Waste Profile Number	NESHAP Notified	WSR Number
523415ME	_____YES _____NO	53630

1-B. Generator Name, Contact Name, and Complete Mailing Address (including Zip Code) Wynn MA, LLC attn: Robert DeSalvio 1 Horizon Way Everett, MA 02149	1-C. Generator's Phone Number 857-770-7000
1-D. Work Site Address Wynn MA, LLC 1 Horizon Way Everett, MA 02149	1-E. 24 Hour Emergency Response Telephone Number
2. Operator's Name and Complete Mailing Address Charter Contracting LLC 500 Harrison Ave. Boston, MA 02118	Operator's Phone Number 857-246-6801
3. Waste Disposal Site (WDS) Name and Complete Mailing Address WM Disposal Services of ME - Crossroads 357 Mercer Road Norridgewock, ME 04957	WDS Phone Number 207-634-2714

4. Name and Address of Responsible Agency

5. Description of Materials		6. Containers No.	Type	7. Total Quantity yd3
friable asbestos	RQ, NA2212, Asbestos, 9, PGIII			
non-friable asbestos	Cat I _____ Cat II _____			

8. Special Handling Instructions and Additional Information
24 HOUR NOTICE GIVEN PRIOR TO DISPOSAL, MUST BE BURIED

9. GENERATOR/OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations. I hereby certify that the asbestos is not contaminated with hazardous, PCB, and/or any special waste.

Printed/Typed Name and Title	Signature	Date
Chris Gordon Pres Wynn Dev.	Chris Gordon	12/27/2017

Transporter

10. Transporter 1 Company Name Shipyard Waste Complete Mailing Address 434 Dow Hwy Eliot ME Telephone Number (including area code) (207) 439-5574	Driver Signature [signature] Printed Name and Title Roy Klember Driver Date 12/29/17
11. Transporter 2 Company Name Complete Mailing Address Telephone Number (including area code)	Driver Signature Printed Name and Title Date

Disposal Site

12. Discrepancy Indication Space

13. Waste Disposal Site Owner or Operator

Certification of receipt of asbestos materials covered by this manifest except as noted in Item 12. #914169 M42 286

Printed/Typed Name and Title	Signature	Date
Lilly Files Scales	WMDSM Lt	1-2-2018

WHITE - Disposal Site CANARY - Generator (To be mailed by Disposal Site) PINK - Transporter GOLD - Generator (To be taken prior to disposal)

DCE-230-97

WASTE MANAGEMENT

WM Disp Services of Maine
357 Mercer Rd
Norridgewock, ME, 04957
Ph: (207) 634-2714

Original 1621600

Ticket# 914173

Customer Name	CHARTERCONTRACTING CHARTER	Carrier	NRES NON-RESIDENT		
Ticket Date	01/02/2018	Vehicle#	SHIPYARD506	Volume	
Payment Type	Credit Account	Container			
Manual Ticket#		Driver			
Hauling Ticket#		Check#			
Route		Billing #	0113697		
State Waste Code		Gen EPA ID	NOT REQUIRED		
Manifest	53633	PO			
Destination	PH8	Profile	523415ME (ASBESTOS CONTAMINATED SE		
Grid	M42	Generator	NE-WYNNMALLC WYNN MA, LLC		

	Time	Scale	Operator	Inbound		
In	01/02/2018 08:10:56	Scale1 Inboun	1files		Gross	47540 lb
Out	01/02/2018 09:39:48	Scale 2 Out	1files		Tare	43900 lb
					Net	3640 lb
					Tons	1.82

Comments

	Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1	Asb Non Fri-Tons-A	100	1.82	Tons				MA
2	EVF-P14-Environmen	100		%				MA
3	RCR-P-Regulatory C	100		%				MA
4	LFS4-LANDFILL FIXE	100		%				MA

Total Fees
Total Ticket

OUT-OF-STATE SOLID WASTE TRANSPORTER DECLARATION: I certify under penalty of perjury that the information provided is true and correct to the best of my knowledge and belief.
TO THE BEST OF MY KNOWLEDGE THIS TRUCK CONTAINS NO HAZARDUS OR UNACCEPTABLE WASTE.

404WM-N

506

WASTE SHIPMENT RECORD/ASBESTOS MANIFEST

(See Reverse for Instructions)

For Disposal Site Use Only

Elevation_____

North_____ East_____

Generator

1-A. Special Waste Profile Number	NESHAP Notified	WSR Number
523415ME	_____YES _____NO	53633

1-B. Generator Name, Contact Name, and Complete Mailing Address (including Zip Code) Wynn MA, LLC attn: Robert DeSalivio 1 Horizon Way Everett, MA 02149	1-C. Generator's Phone Number 857-770-7000
1-D. Work Site Address Wynn MA, LLC 1 Horizon Way Everett, MA 02149	1-E. 24 Hour Emergency Response Telephone Number
2. Operator's Name and Complete Mailing Address Charter Contracting LLC 500 Harrison Ave. Boston, MA 02118	Operator's Phone Number 857-246-6801
3. Waste Disposal Site (WDS) Name and Complete Mailing Address WM Disposal Services of ME - Crossroads 357 Mercer Road Norridgewock, ME 04957	WDS Phone Number 207-634-2714

4. Name and Address of Responsible Agency

5. Description of Materials		6. Containers No.	Type	7. Total Quantity yd3
friable asbestos	RQ, NA2212, Asbestos, 9, PGIII			
non-friable asbestos X	Cat I _____ Cat II _____	1		15 Tonest

8. Special Handling Instructions and Additional Information
24 HOUR NOTICE GIVEN PRIOR TO DISPOSAL, MUST BE BURIED

9. GENERATOR/OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations. I hereby certify that the asbestos is not contaminated with hazardous, PCB, and/or any special waste.

Printed/Typed Name and Title	Signature	Date
Chris Gorn, Pres Wynn DEV	[signature]	12/27/2017

Transporter

10. Transporter 1 Company Name Ship Yard waste Complete Mailing Address RT 236 Eliot ME Telephone Number (including area code) 207 439-5574	Driver Signature [signature] Printed Name and Title Douglas Lipert Date 12-29-17
11. Transporter 2 Company Name Complete Mailing Address Telephone Number (including area code)	Driver Signature Printed Name and Title Date

Disposal Site

12. Discrepancy Indication Space

13. Waste Disposal Site Owner or Operator

Certification of receipt of asbestos materials covered by this manifest except as noted in Item 12. M42 286 #914173

Printed/Typed Name and Title	Signature	Date
Lilly Files Scales	WMD Smith	1-2-2018

WHITE - Disposal Site CANARY - Generator (To be mailed by Disposal Site) PINK - Transporter GOLD - Generator (To be taken prior to disposal)

DCE-230-97

		Charter				
Name:	21627 Wynn (SPS)					
Facility:	Crossroads Norridgewock, ME					
Date:	01.30.18					
Approval:	523415ME					
Date	Ld	Truck Name	#		Ticket	Tons
01.30.18	1	SWS	x	*Tipped 01.31.18	917111	1.35
01.30.18	1	Z Total				1.35

WASTE MANAGEMENT

WM Disp Services of Maine
357 Mercer Rd
Norridgewock, ME, 04957
Ph: (207) 634-2714

Original 1620559

Ticket# 917111

Customer Name	CHARTERCONTRACTING CHARTER	Carrier	RES RESIDENT	
Ticket Date	01/31/2018	Vehicle#	SHIPYARD	Volume
Payment Type	Credit Account	Container		
Manual Ticket#		Driver		
Hauling Ticket#		Check#		
Route		Billing #	0113697	
State Waste Code		Gen EPA ID	NOT REQUIRED	
Manifest	53629	PO		
Destination	PH8	Profile	523415ME (ASBESTOS CONTAMINATED SE	
Grid	040	Generator	NE-WYNNMALLC WYNN MA, LLC	

	Time	Scale	Operator	Inbound		
In	01/31/2018 08:43:04	Scale1 Inboun	1files		Gross	37480 lb
Out	01/31/2018 09:02:10	Scale 2 Out	1files		Tare	34780 lb
					Net	2700 lb
					Tons	1.35

Comments

	Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1	Asb Non Fri-Tons-A	100	1.35	Tons				MA
2	EVF-P14-Environmen	100		%				MA
3	RCR-P-Regulatory C	100		%				MA
4	LFS4-LANDFILL FIXE	100		%				MA

Total Fees
Total Ticket

OUT-OF-STATE SOLID WASTE TRANSPORTER DECLARATION: I certify under penalty of perjury that the information provided is true and correct to the best of my knowledge and belief.
TO THE BEST OF MY KNOWLEDGE THIS TRUCK CONTAINS NO HAZARDUS OR UNACCEPTABLE WASTE.

Driver's Signature _____

404WM-N

WASTE SHIPMENT RECORD / ASBESTOS MANIFEST

(See Reverse for Instructions)

For Disposal Site Use Only

Elevation_____

North_____ East_____

Generator

1-A. Special Waste Profile Number	NESHAP Notified	WSR Number
523415ME	_____YES _____NO	53629

1-B. Generator Name, Contact Name, and Complete Mailing Address (including Zip Code)
Wynn MA, LLC attn: Robert DeSalvio
1 Horizon Way Everett, MA 02149

1-C. Generator's Phone Number
857-770-7000

1-D. Work Site Address
Wynn MA, LLC
1 Horizon Way Everett, MA 02149

1-E. 24 Hour Emergency Response Telephone Number

2. Operator's Name and Complete Mailing Address
Charter Contracting LLC
500 Harrison Ave. Boston, MA 02118

Operator's Phone Number
857-246-6801

3. Waste Disposal Site (WDS) Name and Complete Mailing Address
WM Disposal Services of ME - Crossroads
357 Mercer Road
Norridgewock, ME 04957

WDS Phone Number
207-634-2714

4. Name and Address of Responsible Agency

5. Description of Materials		6. Containers No.	Type	7. Total Quantity yd3
friable asbestos	RQ, NA2212, Asbestos, 9, PGIII			
non-friable asbestos	Cat I _____ Cat II _____			

8. Special Handling Instructions and Additional Information
24 HOUR NOTICE GIVEN PRIOR TO DISPOSAL, MUST BE BURIED

9. GENERATOR/OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations. I hereby certify that the asbestos is not contaminated with hazardous, PCB, and/or any special waste.

Printed/Typed Name and Title	Signature	Date
Chris Gordon, DPES Wynn	Chris Gordon	1/29/18

Transporter

10. Transporter 1 Company Name
Shipyard Waste Solutions

Complete Mailing Address
434 Dow Highway Eliot ME

Telephone Number (including area code)
1 800 Demo Can

Driver Signature

Printed Name and Title
Lance Reynolds Driver

Date 1-30-18

11. Transporter 2 Company Name
SWS

Complete Mailing Address
434 Dow Highway Eliot, ME

Telephone Number (including area code)
207-439-5571

Driver Signature

Printed Name and Title
Gary Munn Driver

Date 1/31/18

Disposal Site

12. Discrepancy Indication Space

13. Waste Disposal Site Owner or Operator

Certification of receipt of asbestos materials covered by this manifest except as noted in Item 12. #917111 Q40 290

Printed/Typed Name and Title	Signature	Date
Gillian Scales	[illegible]	01-31-18

WHITE - Disposal Site | CANARY - Generator (To be mailed by Disposal Site) | PINK - Transporter | GOLD - Generator (To be taken prior to disposal)

DCE-230-97

APPENDIX G

Water Treatment System Analytical Data

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Dredging (454)
ESS Laboratory Work Order Number: 1710460

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:10 pm, Nov 14, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses
Alpha Analytical - Westboro, MA Arsenic, Lead

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

SAMPLE RECEIPT

The following samples were received on October 18, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals, EPH, and SVOA were analyzed for a subset of the required MCP list per the client's request.

Revision 1 November 14, 2017: This report has been revised to include PCB results, updated methods for Arsenic and Lead, reporting of Bis (2-ethylhexyl) phthalate only for SVOA and removal of Turbidity results per client request.

Lab Number	Sample Name	Matrix	Analysis
1710460-01	Wynn-CC-171018-Inf-1	Aqueous	8270D
1710460-02	Wynn-CC-171018-Inf-2	Aqueous	§, 6010C, 7470A
1710460-03	Wynn-CC-171018-Inf-3	Aqueous	8082A, EPH8270, MADEP-EPH
1710460-04	Wynn-CC-171018-Inf-4	Aqueous	2540D, 9040
1710460-05	Wynn-CC-171018-Eff-1	Aqueous	8082A, 8270D
1710460-06	Wynn-CC-171018-Eff-2	Aqueous	§, 6010C, 7470A, SUB
1710460-07	Wynn-CC-171018-Eff-3	Aqueous	2540D, 9040
1710460-08	Wynn-CC-171018-Eff-4	Aqueous	EPH8270, MADEP-EPH

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

PROJECT NARRATIVE

8270D Semi-Volatile Organic Compounds

1710460-01	**Surrogate recovery(ies) above upper control limit (S+).** 2,4,6-Tribromophenol (115% @ 15-110%)
C7J0395-CCV1	**Calibration required quadratic regression (Q).** 2,4-Dinitrophenol (104% @ 80-120%)
C7J0396-CCV1	**Calibration required quadratic regression (Q).** 2,4-Dinitrophenol (98% @ 80-120%)
CJ72424-BS1	**Blank Spike recovery is above upper control limit (B+).** 2,4,6-Tribromophenol (113% @ 15-110%)
CJ72424-BSD1	**Blank Spike recovery is above upper control limit (B+).** 2,4,6-Tribromophenol (124% @ 15-110%), p-Terphenyl-d14 (134% @ 30-130%)
CJ72424-BSD1	**Relative percent difference for duplicate is outside of criteria (D+).** 2,4-Dinitrophenol (22% @ 20%), 2-Methylphenol (21% @ 20%), 3+4-Methylphenol (22% @ 20%), 4-Nitrophenol (22% @ 20%), Phenol (21% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Sediment Remediation ESS Laboratory Work Order: 1710460

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1710460-01 through 1710460-08**

Matrices: ( ) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air (X) Other: Aqueous

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	( ) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	( ) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	(X) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes (X) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes ( ) No (X)*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: October 26, 2017
Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-1
Date Sampled: 10/18/17 12:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 10/24/17 18:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	**450** (56.1)		8270D		10	10/25/17 20:36	C7J0395	CJ72424

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*115 %*	*S+*	*15-110*
Surrogate: 2-Chlorophenol-d4	*78 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*95 %*		*30-130*
Surrogate: 2-Fluorophenol	*62 %*		*15-110*
Surrogate: Nitrobenzene-d5	*93 %*		*30-130*
Surrogate: Phenol-d6	*84 %*		*15-110*
Surrogate: p-Terphenyl-d14	*90 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-2
Date Sampled: 10/18/17 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	**151** (100)		6010C		4	KJK	10/24/17 12:42	50	25	CJ71842
Lead	**18** (5)		§		1	SUB	11/08/17 9:51	1	1	CK71430
Mercury	ND (0.20)		7470A		1	MJV	10/20/17 13:51	20	40	CJ71843
Vanadium	ND (20.0)		6010C		2	KJK	10/23/17 17:58	50	25	CJ71842

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-3
Date Sampled: 10/18/17 12:10
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 10/30/17 15:10

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/31/17 20:47		CJ73001
Aroclor 1221	ND (0.05)		8082A		1	10/31/17 20:47		CJ73001
Aroclor 1232	ND (0.05)		8082A		1	10/31/17 20:47		CJ73001
Aroclor 1242 [2C]	**0.15** (0.05)		8082A		1	10/31/17 20:47		CJ73001
Aroclor 1248	ND (0.05)		8082A		1	10/31/17 20:47		CJ73001
Aroclor 1254	**0.15** (0.05)		8082A		1	10/31/17 20:47		CJ73001
Aroclor 1260 [2C]	**0.05** (0.05)		8082A		1	10/31/17 20:47		CJ73001
Aroclor 1262	ND (0.05)		8082A		1	10/31/17 20:47		CJ73001
Aroclor 1268	ND (0.05)		8082A		1	10/31/17 20:47		CJ73001

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-3
Date Sampled: 10/18/17 12:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 10/23/17 15:02

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	**125** (93)		MADEP-EPH		1	ZLC	10/24/17 2:43	C7J0339	CJ72304
C19-C36 Aliphatics1	**365** (93)		MADEP-EPH		1	ZLC	10/24/17 2:43	C7J0339	CJ72304
C11-C22 Unadjusted Aromatics1	**387** (93.5)		EPH8270		1	VSC	10/23/17 18:28	C7J0345	CJ72304
C11-C22 Aromatics1,2	**387** (93.5)		EPH8270			VSC	10/23/17 18:28		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CJ72304

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*62 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*100 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*113 %*		*40-140*
Surrogate: O-Terphenyl	*93 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-4
Date Sampled: 10/18/17 12:10
Percent Solids: N/A

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-04
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**6.90** (N/A)		9040		1	BCA	10/18/17 22:15	S.U.	CJ71837
pH Sample Temp	**Aqueous pH measured in water at 15.2 ºC.** (N/A)								
Total Suspended Solids	**50** (5)		2540D		1	JLK	10/18/17 22:28	mg/L	CJ71828

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-1
Date Sampled: 10/18/17 12:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 10/30/17 15:10

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/31/17 21:06		CJ73001
Aroclor 1221	ND (0.05)		8082A		1	10/31/17 21:06		CJ73001
Aroclor 1232	ND (0.05)		8082A		1	10/31/17 21:06		CJ73001
Aroclor 1242	ND (0.05)		8082A		1	10/31/17 21:06		CJ73001
Aroclor 1248	ND (0.05)		8082A		1	10/31/17 21:06		CJ73001
Aroclor 1254	ND (0.05)		8082A		1	10/31/17 21:06		CJ73001
Aroclor 1260	ND (0.05)		8082A		1	10/31/17 21:06		CJ73001
Aroclor 1262	ND (0.05)		8082A		1	10/31/17 21:06		CJ73001
Aroclor 1268	ND (0.05)		8082A		1	10/31/17 21:06		CJ73001

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*85 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*91 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-1
Date Sampled: 10/18/17 12:10
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 10/24/17 18:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	**11.3** (6.0)		8270D		1	10/25/17 17:04	C7J0395	CJ72424

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*62 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*80 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*67 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*
Surrogate: 2-Fluorophenol	*64 %*		*15-110*
Surrogate: Nitrobenzene-d5	*70 %*		*30-130*
Surrogate: Phenol-d6	*69 %*		*15-110*
Surrogate: p-Terphenyl-d14	*41 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-2
Date Sampled: 10/18/17 12:10
Percent Solids: N/A

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: General Subbed Prep

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	**9** (5)		SUB		1	SUB	11/08/17 9:55	1	1	CK71430
Lead	ND (5)		§		1	SUB	11/08/17 9:55	1	1	CK71430
Mercury	ND (0.20)		7470A		1	MJV	10/20/17 13:53	20	40	CJ71843
Vanadium	ND (20.0)		6010C		2	KJK	10/23/17 18:03	50	25	CJ71842

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-3
Date Sampled: 10/18/17 12:15
Percent Solids: N/A

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-07
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**8.26** (N/A)		9040		1	BCA	10/18/17 22:15	S.U.	CJ71837
pH Sample Temp	**Aqueous pH measured in water at 16.2 ºC.** (N/A)								
Total Suspended Solids	**22** (5)		2540D		1	JLK	10/18/17 22:28	mg/L	CJ71828

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-4
Date Sampled: 10/18/17 12:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-08
Sample Matrix: Aqueous
Units: ug/L

Prepared: 10/23/17 15:02

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	10/24/17 3:31	C7J0339	CJ72304
C19-C36 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	10/24/17 3:31	C7J0339	CJ72304
C11-C22 Unadjusted Aromatics1	ND (93.5)		EPH8270		1	VSC	10/23/17 19:02	C7J0345	CJ72304
C11-C22 Aromatics1,2	ND (93.5)		EPH8270			VSC	10/23/17 19:02		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CJ72304

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*70 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*98 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*109 %*		*40-140*
Surrogate: O-Terphenyl	*94 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ71842 - 3005A/200.7										
Blank										
Arsenic	ND	25.0	ug/L							
Vanadium	ND	10.0	ug/L							
LCS										
Arsenic	250	25.0	ug/L	250.0		100	80-120			
Vanadium	255	10.0	ug/L	250.0		102	80-120			
LCS Dup										
Arsenic	257	25.0	ug/L	250.0		103	80-120	3	20	
Vanadium	257	10.0	ug/L	250.0		103	80-120	0.8	20	
Batch CJ71843 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.74	0.20	ug/L	6.000		96	80-120			
LCS Dup										
Mercury	6.01	0.20	ug/L	6.000		100	80-120	5	20	
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ73001 - 3510C										
Blank										
Aroclor 1016	ND	0.05	ug/L							
Aroclor 1016 [2C]	ND	0.05	ug/L							
Aroclor 1221	ND	0.05	ug/L							
Aroclor 1221 [2C]	ND	0.05	ug/L							
Aroclor 1232	ND	0.05	ug/L							
Aroclor 1232 [2C]	ND	0.05	ug/L							
Aroclor 1242	ND	0.05	ug/L							
Aroclor 1242 [2C]	ND	0.05	ug/L							
Aroclor 1248	ND	0.05	ug/L							
Aroclor 1248 [2C]	ND	0.05	ug/L							
Aroclor 1254	ND	0.05	ug/L							
Aroclor 1254 [2C]	ND	0.05	ug/L							
Aroclor 1260	ND	0.05	ug/L							
Aroclor 1260 [2C]	ND	0.05	ug/L							
Aroclor 1262	ND	0.05	ug/L							
Aroclor 1262 [2C]	ND	0.05	ug/L							
Aroclor 1268	ND	0.05	ug/L							
Aroclor 1268 [2C]	ND	0.05	ug/L							
Surrogate: Decachlorobiphenyl	*ND*		ug/L	*0.05000*		*84*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*ND*		ug/L	*0.05000*		*67*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*ND*		ug/L	*0.05000*		*62*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*ND*		ug/L	*0.05000*		*62*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ73001 - 3510C										
LCS										
Aroclor 1016	0.89	0.05	ug/L	1.000		89	40-140			
Aroclor 1016 [2C]	0.72	0.05	ug/L	1.000		72	40-140			
Aroclor 1260	0.95	0.05	ug/L	1.000		95	40-140			
Aroclor 1260 [2C]	0.74	0.05	ug/L	1.000		74	40-140			
Surrogate: Decachlorobiphenyl	*0.0515*		ug/L	*0.05000*		*103*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0401*		ug/L	*0.05000*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0354*		ug/L	*0.05000*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0320*		ug/L	*0.05000*		*64*	*30-150*			
LCS Dup										
Aroclor 1016	0.91	0.05	ug/L	1.000		91	40-140	2	20	
Aroclor 1016 [2C]	0.76	0.05	ug/L	1.000		76	40-140	5	20	
Aroclor 1260	1.01	0.05	ug/L	1.000		101	40-140	6	20	
Aroclor 1260 [2C]	0.80	0.05	ug/L	1.000		80	40-140	7	20	
Surrogate: Decachlorobiphenyl	*0.0519*		ug/L	*0.05000*		*104*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0383*		ug/L	*0.05000*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0379*		ug/L	*0.05000*		*76*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0327*		ug/L	*0.05000*		*65*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CJ72424 - 3520C										
Blank										
1,2,4-Trichlorobenzene	ND	10.0	ug/L							
1,2-Dichlorobenzene	ND	10.0	ug/L							
1,3-Dichlorobenzene	ND	10.0	ug/L							
1,4-Dichlorobenzene	ND	5.0	ug/L							
2,4,5-Trichlorophenol	ND	10.0	ug/L							
2,4,6-Trichlorophenol	ND	10.0	ug/L							
2,4-Dichlorophenol	ND	10.0	ug/L							
2,4-Dimethylphenol	ND	50.0	ug/L							
2,4-Dinitrophenol	ND	50.0	ug/L							
2,4-Dinitrotoluene	ND	10.0	ug/L							
2,6-Dinitrotoluene	ND	10.0	ug/L							
2-Chloronaphthalene	ND	10.0	ug/L							
2-Chlorophenol	ND	10.0	ug/L							
2-Methylnaphthalene	ND	10.0	ug/L							
2-Methylphenol	ND	10.0	ug/L							
2-Nitrophenol	ND	10.0	ug/L							
3,3´-Dichlorobenzidine	ND	20.0	ug/L							
3+4-Methylphenol	ND	20.0	ug/L							
4-Bromophenyl-phenylether	ND	10.0	ug/L							
4-Chloroaniline	ND	20.0	ug/L							
4-Nitrophenol	ND	50.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ72424 - 3520C										
Acenaphthene	ND	10.0	ug/L							
Acenaphthylene	ND	10.0	ug/L							
Acetophenone	ND	10.0	ug/L							
Aniline	ND	10.0	ug/L							
Anthracene	ND	10.0	ug/L							
Azobenzene	ND	20.0	ug/L							
Benzo(a)anthracene	ND	10.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	10.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
bis(2-Chloroethoxy)methane	ND	10.0	ug/L							
bis(2-Chloroethyl)ether	ND	10.0	ug/L							
bis(2-chloroisopropyl)Ether	ND	10.0	ug/L							
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Butylbenzylphthalate	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	10.0	ug/L							
Dibenzofuran	ND	10.0	ug/L							
Diethylphthalate	ND	10.0	ug/L							
Dimethylphthalate	ND	10.0	ug/L							
Di-n-butylphthalate	ND	10.0	ug/L							
Di-n-octylphthalate	ND	10.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	10.0	ug/L							
Hexachlorobenzene	ND	10.0	ug/L							
Hexachlorobutadiene	ND	10.0	ug/L							
Hexachloroethane	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	10.0	ug/L							
Isophorone	ND	10.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Nitrobenzene	ND	10.0	ug/L							
N-Nitrosodimethylamine	ND	10.0	ug/L							
Pentachlorophenol	ND	50.0	ug/L							
Phenanthrene	ND	10.0	ug/L							
Phenol	ND	10.0	ug/L							
Pyrene	ND	10.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*56.9*		ug/L	*100.0*		*57*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*105*		ug/L	*150.0*		*70*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*85.0*		ug/L	*150.0*		*57*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*63.3*		ug/L	*100.0*		*63*	*30-130*			
Surrogate: 2-Fluorophenol	*74.4*		ug/L	*150.0*		*50*	*15-110*			
Surrogate: Nitrobenzene-d5	*63.0*		ug/L	*100.0*		*63*	*30-130*			
Surrogate: Phenol-d6	*84.8*		ug/L	*150.0*		*57*	*15-110*			
Surrogate: p-Terphenyl-d14	*74.0*		ug/L	*100.0*		*74*	*30-130*			
LCS										

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ72424 - 3520C										
1,2,4-Trichlorobenzene	85.1	10.0	ug/L	100.0		85	40-140			
1,2-Dichlorobenzene	78.0	10.0	ug/L	100.0		78	40-140			
1,3-Dichlorobenzene	76.7	10.0	ug/L	100.0		77	40-140			
1,4-Dichlorobenzene	76.2	10.0	ug/L	100.0		76	40-140			
2,4,5-Trichlorophenol	99.0	10.0	ug/L	100.0		99	30-130			
2,4,6-Trichlorophenol	95.0	10.0	ug/L	100.0		95	30-130			
2,4-Dichlorophenol	83.5	10.0	ug/L	100.0		84	30-130			
2,4-Dimethylphenol	74.2	50.0	ug/L	100.0		74	30-130			
2,4-Dinitrophenol	84.2	50.0	ug/L	100.0		84	30-130			
2,4-Dinitrotoluene	89.3	10.0	ug/L	100.0		89	40-140			
2,6-Dinitrotoluene	94.8	10.0	ug/L	100.0		95	40-140			
2-Chloronaphthalene	84.0	10.0	ug/L	100.0		84	40-140			
2-Chlorophenol	72.3	10.0	ug/L	100.0		72	30-130			
2-Methylnaphthalene	83.0	10.0	ug/L	100.0		83	40-140			
2-Methylphenol	75.0	10.0	ug/L	100.0		75	30-130			
2-Nitrophenol	78.4	10.0	ug/L	100.0		78	30-130			
3,3´-Dichlorobenzidine	82.8	20.0	ug/L	100.0		83	40-140			
3+4-Methylphenol	149	20.0	ug/L	200.0		75	30-130			
4-Bromophenyl-phenylether	95.8	10.0	ug/L	100.0		96	40-140			
4-Chloroaniline	76.9	20.0	ug/L	100.0		77	40-140			
4-Nitrophenol	82.4	50.0	ug/L	100.0		82	30-130			
Acenaphthene	86.6	10.0	ug/L	100.0		87	40-140			
Acenaphthylene	86.3	10.0	ug/L	100.0		86	40-140			
Acetophenone	89.6	10.0	ug/L	100.0		90	40-140			
Aniline	77.0	10.0	ug/L	100.0		77	40-140			
Anthracene	88.2	10.0	ug/L	100.0		88	40-140			
Azobenzene	88.4	20.0	ug/L	100.0		88	40-140			
Benzo(a)anthracene	92.0	10.0	ug/L	100.0		92	40-140			
Benzo(a)pyrene	92.5	10.0	ug/L	100.0		93	40-140			
Benzo(b)fluoranthene	101	10.0	ug/L	100.0		101	40-140			
Benzo(g,h,i)perylene	91.3	10.0	ug/L	100.0		91	40-140			
Benzo(k)fluoranthene	95.0	10.0	ug/L	100.0		95	40-140			
bis(2-Chloroethoxy)methane	84.9	10.0	ug/L	100.0		85	40-140			
bis(2-Chloroethyl)ether	78.3	10.0	ug/L	100.0		78	40-140			
bis(2-chloroisopropyl)Ether	79.3	10.0	ug/L	100.0		79	40-140			
bis(2-Ethylhexyl)phthalate	117	6.0	ug/L	100.0		117	40-140			
Butylbenzylphthalate	112	10.0	ug/L	100.0		112	40-140			
Chrysene	92.0	10.0	ug/L	100.0		92	40-140			
Dibenzo(a,h)Anthracene	94.0	10.0	ug/L	100.0		94	40-140			
Dibenzofuran	88.7	10.0	ug/L	100.0		89	40-140			
Diethylphthalate	94.6	10.0	ug/L	100.0		95	40-140			
Dimethylphthalate	92.9	10.0	ug/L	100.0		93	40-140			
Di-n-butylphthalate	107	10.0	ug/L	100.0		107	40-140			
Di-n-octylphthalate	116	10.0	ug/L	100.0		116	40-140			
Fluoranthene	100	10.0	ug/L	100.0		100	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ72424 - 3520C										
Fluorene	91.5	10.0	ug/L	100.0		92	40-140			
Hexachlorobenzene	96.8	10.0	ug/L	100.0		97	40-140			
Hexachlorobutadiene	90.8	10.0	ug/L	100.0		91	40-140			
Hexachloroethane	75.7	5.0	ug/L	100.0		76	40-140			
Indeno(1,2,3-cd)Pyrene	93.9	10.0	ug/L	100.0		94	40-140			
Isophorone	81.1	10.0	ug/L	100.0		81	40-140			
Naphthalene	85.1	10.0	ug/L	100.0		85	40-140			
Nitrobenzene	84.4	10.0	ug/L	100.0		84	40-140			
N-Nitrosodimethylamine	74.2	10.0	ug/L	100.0		74	40-140			
Pentachlorophenol	96.4	50.0	ug/L	100.0		96	30-130			
Phenanthrene	89.2	10.0	ug/L	100.0		89	40-140			
Phenol	70.3	10.0	ug/L	100.0		70	30-130			
Pyrene	96.4	10.0	ug/L	100.0		96	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*83.4*		ug/L	*100.0*		*83*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*169*		ug/L	*150.0*		*113*	*15-110*			*B+*
Surrogate: 2-Chlorophenol-d4	*116*		ug/L	*150.0*		*78*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*96.3*		ug/L	*100.0*		*96*	*30-130*			
Surrogate: 2-Fluorophenol	*94.1*		ug/L	*150.0*		*63*	*15-110*			
Surrogate: Nitrobenzene-d5	*93.8*		ug/L	*100.0*		*94*	*30-130*			
Surrogate: Phenol-d6	*116*		ug/L	*150.0*		*77*	*15-110*			
Surrogate: p-Terphenyl-d14	*111*		ug/L	*100.0*		*111*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	94.5	10.0	ug/L	100.0		94	40-140	10	20	
1,2-Dichlorobenzene	90.4	10.0	ug/L	100.0		90	40-140	15	20	
1,3-Dichlorobenzene	88.9	10.0	ug/L	100.0		89	40-140	15	20	
1,4-Dichlorobenzene	88.3	10.0	ug/L	100.0		88	40-140	15	20	
2,4,5-Trichlorophenol	113	10.0	ug/L	100.0		113	30-130	13	20	
2,4,6-Trichlorophenol	101	10.0	ug/L	100.0		101	30-130	6	20	
2,4-Dichlorophenol	97.7	10.0	ug/L	100.0		98	30-130	16	20	
2,4-Dimethylphenol	88.5	50.0	ug/L	100.0		88	30-130	18	20	
2,4-Dinitrophenol	105	50.0	ug/L	100.0		105	30-130	22	20	D+
2,4-Dinitrotoluene	108	10.0	ug/L	100.0		108	40-140	19	20	
2,6-Dinitrotoluene	111	10.0	ug/L	100.0		111	40-140	16	20	
2-Chloronaphthalene	88.7	10.0	ug/L	100.0		89	40-140	5	20	
2-Chlorophenol	86.2	10.0	ug/L	100.0		86	30-130	18	20	
2-Methylnaphthalene	96.1	10.0	ug/L	100.0		96	40-140	15	20	
2-Methylphenol	92.3	10.0	ug/L	100.0		92	30-130	21	20	D+
2-Nitrophenol	90.9	10.0	ug/L	100.0		91	30-130	15	20	
3,3´-Dichlorobenzidine	92.7	20.0	ug/L	100.0		93	40-140	11	20	
3+4-Methylphenol	186	20.0	ug/L	200.0		93	30-130	22	20	D+
4-Bromophenyl-phenylether	104	10.0	ug/L	100.0		104	40-140	8	20	
4-Chloroaniline	91.2	20.0	ug/L	100.0		91	40-140	17	20	
4-Nitrophenol	103	50.0	ug/L	100.0		103	30-130	22	20	D+
Acenaphthene	95.3	10.0	ug/L	100.0		95	40-140	10	20	
Acenaphthylene	95.0	10.0	ug/L	100.0		95	40-140	10	20	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ72424 - 3520C										
Acetophenone	105	10.0	ug/L	100.0		105	40-140	16	20	
Aniline	92.7	10.0	ug/L	100.0		93	40-140	18	20	
Anthracene	98.6	10.0	ug/L	100.0		99	40-140	11	20	
Azobenzene	96.3	20.0	ug/L	100.0		96	40-140	9	20	
Benzo(a)anthracene	103	10.0	ug/L	100.0		103	40-140	11	20	
Benzo(a)pyrene	104	10.0	ug/L	100.0		104	40-140	12	20	
Benzo(b)fluoranthene	111	10.0	ug/L	100.0		111	40-140	9	20	
Benzo(g,h,i)perylene	106	10.0	ug/L	100.0		106	40-140	15	20	
Benzo(k)fluoranthene	105	10.0	ug/L	100.0		105	40-140	10	20	
bis(2-Chloroethoxy)methane	94.4	10.0	ug/L	100.0		94	40-140	11	20	
bis(2-Chloroethyl)ether	88.2	10.0	ug/L	100.0		88	40-140	12	20	
bis(2-chloroisopropyl)Ether	90.8	10.0	ug/L	100.0		91	40-140	13	20	
bis(2-Ethylhexyl)phthalate	128	6.0	ug/L	100.0		128	40-140	10	20	
Butylbenzylphthalate	124	10.0	ug/L	100.0		124	40-140	10	20	
Chrysene	102	10.0	ug/L	100.0		102	40-140	11	20	
Dibenzo(a,h)Anthracene	109	10.0	ug/L	100.0		109	40-140	15	20	
Dibenzofuran	99.6	10.0	ug/L	100.0		100	40-140	12	20	
Diethylphthalate	112	10.0	ug/L	100.0		112	40-140	16	20	
Dimethylphthalate	107	10.0	ug/L	100.0		107	40-140	14	20	
Di-n-butylphthalate	117	10.0	ug/L	100.0		117	40-140	9	20	
Di-n-octylphthalate	117	10.0	ug/L	100.0		117	40-140	0.8	20	
Fluoranthene	101	10.0	ug/L	100.0		101	40-140	0.3	20	
Fluorene	105	10.0	ug/L	100.0		105	40-140	14	20	
Hexachlorobenzene	105	10.0	ug/L	100.0		105	40-140	8	20	
Hexachlorobutadiene	96.8	10.0	ug/L	100.0		97	40-140	6	20	
Hexachloroethane	87.2	5.0	ug/L	100.0		87	40-140	14	20	
Indeno(1,2,3-cd)Pyrene	109	10.0	ug/L	100.0		109	40-140	15	20	
Isophorone	92.4	10.0	ug/L	100.0		92	40-140	13	20	
Naphthalene	94.8	10.0	ug/L	100.0		95	40-140	11	20	
Nitrobenzene	93.7	10.0	ug/L	100.0		94	40-140	11	20	
N-Nitrosodimethylamine	82.8	10.0	ug/L	100.0		83	40-140	11	20	
Pentachlorophenol	111	50.0	ug/L	100.0		111	30-130	14	20	
Phenanthrene	99.4	10.0	ug/L	100.0		99	40-140	11	20	
Phenol	86.7	10.0	ug/L	100.0		87	30-130	21	20	D+
Pyrene	118	10.0	ug/L	100.0		118	40-140	20	20	
Surrogate: 1,2-Dichlorobenzene-d4	*93.2*		ug/L	*100.0*		*93*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*186*		ug/L	*150.0*		*124*	*15-110*			*B+*
Surrogate: 2-Chlorophenol-d4	*138*		ug/L	*150.0*		*92*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*98.2*		ug/L	*100.0*		*98*	*30-130*			
Surrogate: 2-Fluorophenol	*116*		ug/L	*150.0*		*77*	*15-110*			
Surrogate: Nitrobenzene-d5	*102*		ug/L	*100.0*		*102*	*30-130*			
Surrogate: Phenol-d6	*142*		ug/L	*150.0*		*95*	*15-110*			
Surrogate: p-Terphenyl-d14	*134*		ug/L	*100.0*		*134*	*30-130*			*B+*
Classical Chemistry										

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CJ71828 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	32		mg/L	34.10		94	80-120			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CJ72304 - 3510C										
Blank										
C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	100	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							
Surrogate: 1-Chlorooctadecane	*37.6*		ug/L	*50.00*		*75*	*40-140*			
Blank										
2-Methylnaphthalene	ND	5.0	ug/L							
Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CJ72304 - 3510C										
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	*51.0*		ug/L	*50.00*		*102*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*49.7*		ug/L	*50.00*		*99*	*40-140*			
Surrogate: O-Terphenyl	*41.4*		ug/L	*50.00*		*83*	*40-140*			
LCS										
C19-C36 Aliphatics1	343	100	ug/L	400.0		86	40-140			
C9-C18 Aliphatics1	191	100	ug/L	300.0		64	40-140			
Decane (C10)	23	5	ug/L	50.00		47	40-140			
Docosane (C22)	39	5	ug/L	50.00		78	40-140			
Dodecane (C12)	24	5	ug/L	50.00		49	40-140			
Eicosane (C20)	39	5	ug/L	50.00		79	40-140			
Hexacosane (C26)	40	5	ug/L	50.00		79	40-140			
Hexadecane (C16)	38	5	ug/L	50.00		76	40-140			
Hexatriacontane (C36)	41	5	ug/L	50.00		82	40-140			
Nonadecane (C19)	40	5	ug/L	50.00		80	40-140			
Nonane (C9)	19	5	ug/L	50.00		37	30-140			
Octacosane (C28)	40	5	ug/L	50.00		79	40-140			
Octadecane (C18)	38	5	ug/L	50.00		76	40-140			
Tetracosane (C24)	39	5	ug/L	50.00		79	40-140			
Tetradecane (C14)	34	5	ug/L	50.00		68	40-140			
Triacontane (C30)	40	5	ug/L	50.00		80	40-140			
Surrogate: 1-Chlorooctadecane	*34.5*		ug/L	*50.00*		*69*	*40-140*			
LCS										
2-Methylnaphthalene	37.6	5.0	ug/L	50.00		75	40-140			
Acenaphthene	42.1	5.0	ug/L	50.00		84	40-140			
Acenaphthylene	42.7	5.0	ug/L	50.00		85	40-140			
Anthracene	43.2	5.0	ug/L	50.00		86	40-140			
Benzo(a)anthracene	45.0	5.0	ug/L	50.00		90	40-140			
Benzo(a)pyrene	44.3	10.0	ug/L	50.00		89	40-140			
Benzo(b)fluoranthene	44.1	5.0	ug/L	50.00		88	40-140			
Benzo(g,h,i)perylene	44.9	10.0	ug/L	50.00		90	40-140			
Benzo(k)fluoranthene	44.7	10.0	ug/L	50.00		89	40-140			
C11-C22 Aromatics1,2	82.3	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	815	100	ug/L	850.0		96	40-140			
Chrysene	43.9	10.0	ug/L	50.00		88	40-140			
Dibenzo(a,h)Anthracene	44.5	5.0	ug/L	50.00		89	40-140			
Fluoranthene	41.5	10.0	ug/L	50.00		83	40-140			
Fluorene	42.1	5.0	ug/L	50.00		84	40-140			
Indeno(1,2,3-cd)Pyrene	47.5	5.0	ug/L	50.00		95	40-140			
Naphthalene	40.6	10.0	ug/L	50.00		81	40-140			
Phenanthrene	42.1	5.0	ug/L	50.00		84	40-140			
Pyrene	41.4	5.0	ug/L	50.00		83	40-140			
Surrogate: 2-Bromonaphthalene	*50.0*		ug/L	*50.00*		*100*	*40-140*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CJ72304 - 3510C										
Surrogate: 2-Fluorobiphenyl	*49.7*		ug/L	*50.00*		*99*	*40-140*			
Surrogate: O-Terphenyl	*41.0*		ug/L	*50.00*		*82*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	364	100	ug/L	400.0		91	40-140	6	25	
C9-C18 Aliphatics1	209	100	ug/L	300.0		70	40-140	9	25	
Decane (C10)	27	5	ug/L	50.00		53	40-140	13	25	
Docosane (C22)	42	5	ug/L	50.00		84	40-140	7	25	
Dodecane (C12)	28	5	ug/L	50.00		55	40-140	13	25	
Eicosane (C20)	42	5	ug/L	50.00		84	40-140	7	25	
Hexacosane (C26)	42	5	ug/L	50.00		85	40-140	7	25	
Hexadecane (C16)	41	5	ug/L	50.00		81	40-140	6	25	
Hexatriacontane (C36)	44	5	ug/L	50.00		89	40-140	7	25	
Nonadecane (C19)	42	5	ug/L	50.00		85	40-140	7	25	
Nonane (C9)	21	5	ug/L	50.00		43	30-140	13	25	
Octacosane (C28)	42	5	ug/L	50.00		85	40-140	7	25	
Octadecane (C18)	40	5	ug/L	50.00		81	40-140	7	25	
Tetracosane (C24)	42	5	ug/L	50.00		84	40-140	7	25	
Tetradecane (C14)	37	5	ug/L	50.00		75	40-140	9	25	
Triacontane (C30)	43	5	ug/L	50.00		85	40-140	7	25	
Surrogate: 1-Chlorooctadecane	*36.2*		ug/L	*50.00*		*72*	*40-140*			
LCS Dup										
2-Methylnaphthalene	40.7	5.0	ug/L	50.00		81	40-140	8	20	
Acenaphthene	45.2	5.0	ug/L	50.00		90	40-140	7	20	
Acenaphthylene	45.8	5.0	ug/L	50.00		92	40-140	7	20	
Anthracene	48.6	5.0	ug/L	50.00		97	40-140	12	20	
Benzo(a)anthracene	47.2	5.0	ug/L	50.00		94	40-140	5	20	
Benzo(a)pyrene	48.2	10.0	ug/L	50.00		96	40-140	9	20	
Benzo(b)fluoranthene	47.9	5.0	ug/L	50.00		96	40-140	8	20	
Benzo(g,h,i)perylene	49.9	10.0	ug/L	50.00		100	40-140	10	20	
Benzo(k)fluoranthene	49.6	10.0	ug/L	50.00		99	40-140	10	20	
C11-C22 Aromatics1,2	88.6	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	890	100	ug/L	850.0		105	40-140	9	25	
Chrysene	48.3	10.0	ug/L	50.00		97	40-140	10	20	
Dibenzo(a,h)Anthracene	50.4	5.0	ug/L	50.00		101	40-140	12	20	
Fluoranthene	45.5	10.0	ug/L	50.00		91	40-140	9	20	
Fluorene	44.9	5.0	ug/L	50.00		90	40-140	6	20	
Indeno(1,2,3-cd)Pyrene	54.4	5.0	ug/L	50.00		109	40-140	14	20	
Naphthalene	43.6	10.0	ug/L	50.00		87	40-140	7	20	
Phenanthrene	46.4	5.0	ug/L	50.00		93	40-140	10	20	
Pyrene	44.6	5.0	ug/L	50.00		89	40-140	7	20	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CJ72304 - 3510C										
Surrogate: 2-Bromonaphthalene	*50.5*		ug/L	*50.00*		*101*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*50.7*		ug/L	*50.00*		*101*	*40-140*			
Surrogate: O-Terphenyl	*45.1*		ug/L	*50.00*		*90*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1710460

Notes and Definitions

Z16a	Aqueous pH measured in water at 16.2 ºC.
Z16	Aqueous pH measured in water at 15.2 ºC.
Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
Q	Calibration required quadratic regression (Q).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
B+	Blank Spike recovery is above upper control limit (B+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ANALYTICAL REPORT

Lab Number:	L1740393
Client:	ESS Laboratory 185 Frances Avenue Cranston, RI 02910
ATTN:	Shawn Morrell
Phone:	(401) 461-7181
Project Name:	Not Specified
Project Number:	1710460
Report Date:	11/10/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: Not Specified
Project Number: 1710460

Lab Number: L1740393
Report Date: 11/10/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1740393-01	1710460-02	WATER	Not Specified	10/18/17 12:00	11/03/17
L1740393-02	1710460-06	WATER	Not Specified	10/18/17 12:10	11/03/17
L1740393-03	1710654-02	WATER	Not Specified	10/18/17 11:15	11/03/17
L1740393-04	1710654-06	WATER	Not Specified	10/18/17 11:00	11/03/17

Project Name: Not Specified **Lab Number:** L1740393

Project Number: 1710460 **Report Date:** 11/10/17

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name: Not Specified
Project Number: 1710460

Lab Number: L1740393
Report Date: 11/10/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: Not Specified
Project Number: 1710460
Lab Number: L1740393
Report Date: 11/10/17

Case Narrative (continued)

MCP Related Narratives

Total Metals

L1740393-02: The sample has elevated detection limits due to the dilution required by the high concentrations of target and non-target elements.

In reference to question G:

L1740393-02: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Cripps

Title: Technical Director/Representative

Date: 11/10/17

METALS

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

SAMPLE RESULTS

Lab ID:	L1740393-01	Date Collected:	10/18/17 12:00
Client ID:	1710460-02	Date Received:	11/03/17
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	0.0181		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 09:51	EPA 3005A	97,6020A	AM

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

SAMPLE RESULTS

Lab ID:	L1740393-02	Date Collected:	10/18/17 12:10
Client ID:	1710460-06	Date Received:	11/03/17
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.0090		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 09:55	EPA 3005A	97,6020A	AM
Lead, Total	ND		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 09:55	EPA 3005A	97,6020A	AM

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

SAMPLE RESULTS

Lab ID:	L1740393-03	Date Collected:	10/18/17 11:15
Client ID:	1710654-02	Date Received:	11/03/17
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	0.0511		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 09:59	EPA 3005A	97,6020A	AM

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

SAMPLE RESULTS

Lab ID:	L1740393-04	Date Collected:	10/18/17 11:00
Client ID:	1710654-06	Date Received:	11/03/17
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	0.0117		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 10:03	EPA 3005A	97,6020A	AM

Project Name: Not Specified
Project Number: 1710460
Lab Number: L1740393
Report Date: 11/10/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1060416-1										
Arsenic, Total	ND		mg/l	0.0005	--	1	11/07/17 13:10	11/08/17 09:40	97,6020A	AM
Lead, Total	ND		mg/l	0.0005	--	1	11/07/17 13:10	11/08/17 09:40	97,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 1710460

Lab Number: L1740393
Report Date: 11/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060416-2 WG1060416-3								
Arsenic, Total	106		108		80-120	2		20
Lead, Total	109		110		80-120	1		20

Project Name: Not Specified
Project Number: 1710460

Lab Number: L1740393
Report Date: 11/10/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1740393-01A	Plastic 250ml HNO3 preserved	A	<2	<2	11.4	Y	Absent		MCP-PB-6020T-10(180)
L1740393-02A	Plastic 250ml HNO3 preserved	A	<2	<2	11.4	Y	Absent		MCP-AS-6020T-10(180),MCP-PB-6020T-10(180)
L1740393-03A	Plastic 250ml HNO3 preserved	A	<2	<2	11.4	Y	Absent		MCP-PB-6020T-10(180)
L1740393-04A	Plastic 250ml HNO3 preserved	A	<2	<2	11.4	Y	Absent		MCP-PB-6020T-10(180)

*Values in parentheses indicate holding time in days

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Project Name: Not Specified **Lab Number:** L1740393

Project Number: 1710460 **Report Date:** 11/10/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: Not Specified **Lab Number:** L1740393
Project Number: 1710460 **Report Date:** 11/10/17

REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L1740393

ESS Laboratory — Alpha

Division of Thielsch Engineering, Inc.

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CHAIN OF CUSTODY

ESS Lab # 1710460

Turn Time __x__ Standard Other_____

Reporting Limits - _____NRWQC (SW)_____

Regulatory State: MA RI CT NH NJ NY ME Other_____

Electonic Deliverables Excel Access PDF

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Co. Name: ESS Laboratory	Project #:	Project Name: 1710460	
Contact Person: Shawn Morrell	Proj. Location:		
Address: 185 Frances Ave	Cranston, RI	Zip: 02910	PO #: B2473
Tel.: ext 3083	email: smorrell@thielsch.com	email:	

Analysis

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container		Lead	Arsenic						
40393.01	10/1817	1200	Grab	Aq	1710460-02						X							
.02	10/18/17	1210	Grab	Aq	1710460-06						X	X						
.03	10/25/17	1115	Grab	Aq	1710654-02						X							
.04	10/25/17	1100	Grab	Aq	1710654-06						X							

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only
[ ] Pickup
[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: SALT WATER MRL - Pb < 8.1 ppb, AS < 36 ppb

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
15:16 11/3/17	11/3/17 15:16		
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1710460
Date Received: 10/18/2017
Project Due Date: 10/25/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? ~~Yes~~ / No — ML 10/18/17
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:
No Sample ID's listed on Bottles CA 10/18/17
See Attached ML 10/18/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	173866	Yes	NA	Yes	1L Amber - Unpres	NP	
02	173872	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
03	173869	Yes	NA	Yes	1L Amber - Unpres	NP	
03	173870	Yes	NA	Yes	1L Amber - Unpres	NP	
04	173874	Yes	NA	Yes	1L Poly - Unpres	NP	
05	173863	Yes	NA	Yes	1L Amber - Unpres	NP	
05	173864	Yes	NA	Yes	1L Amber - Unpres	NP	
06	173871	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
07	173873	Yes	NA	Yes	1L Poly - Unpres	NP	
08	173867	Yes	NA	Yes	1L Amber - Unpres	NP	
08	173868	Yes	NA	Yes	1L Amber - Unpres	NP	
08	174007	Yes	NA	Yes	1L Amber - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: [signature] Date & Time: 10/18/17 2036
Reviewed By: [signature] Date & Time: 10/18/17 2130
Delivered By: [signature] 10/18/17 2130

- EPH bottles rec'd unpreserved
- No sample IDs – samples labeled by collection times/tests
- COC = INF-1 = 2 bottles for EA PAH; rec'd 1
- Rec'd bottle collected 10/18/17 at 12:15 for EA PAH; time corresponds with EFF-4 (also collected at 12:15) for EPH. EFF sample for EA PAH is ID'd EFF-1, collected 12:10.

RL 10/18/17 2130

ESS Laboratory

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www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1710460

Turn Time 5-Day Rush

Regulatory State

Is this project for any of the following?: ○CT RCP ○MA MCP ○MP

Reporting Limits

Electonic Deliverables: ☐Limit Checker ☑Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter Contracting	454	Wynn Dredging

Contact Person	Address
Tyler Lewis	95 Behen St.

City	State	Zip Code	PO #
Everett	MA	02149	

Telephone Number	FAX Number	Email Address
508-818-0480		~~[illegible]~~ tlewis@charter.vs

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	EA PAH/SEMI VOA	Metals	TSS	Turbidity	PH	EPH
1	10/18/17	12:00	water grab	AQ	Wynn-CC-171018-INF-1	2					
2	10/18/17	12:00	"		Wynn-CC-171018-INF-2		1				
3	10/18/17	12:10	"		Wynn-CC-171018-INF-3						2
4	10/18/17	12:10	"		Wynn-CC-171018-INF-4			1	1	1	
5	10/18/17	12:10	"		Wynn-CC-171018-EFF-1	2					
6	10/18/17	12:10	"		Wynn-CC-171018-EFF-2		1				
7	10/18/17	12:15	"		Wynn-CC-171018-EFF-3			1	1	1	
8	10/18/17	12:15	"	AQ	Wynn-CC-171018-EFF-4						2
	~~[illegible]~~										

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

	EA PAH/SEMI VOA	Metals	TSS	Turbidity	PH	EPH
Container Type	AG	P				
Container Volume	1L	3				
Preservation Code		4				
Number of Containers per Sample:	2	4	1	1		

Laboratory Use Only

Cooler Present: Y

Seals Intact: NA

Cooler Temperature: °C ice temp 2.3

Sampled by: Tyler Lewis

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 10/18/17 14:30	JAP ~~Charter Fridge 10/18/17 15:39~~		[signature] 10/18/17 15:39
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 10/18/17 19:43	[signature] 10/18/17 2024		

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Dredging (454)
ESS Laboratory Work Order Number: 1710654

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:53 pm, Nov 14, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses
Alpha Analytical - Westboro, MA Lead

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

SAMPLE RECEIPT

The following samples were received on October 25, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals, EPH, and SVOA were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
1710654-01	Wynn-CC-171025-INF1	Aqueous	8082A, 8270D
1710654-02	Wynn-CC-171025-INF2	Aqueous	§, 6010C, 7470A
1710654-03	Wynn-CC-171025-INF3	Aqueous	EPH8270, MADEP-EPH
1710654-04	Wynn-CC-171025-INF4	Aqueous	2540D, 9040
1710654-05	Wynn-CC-171025-EFF1	Aqueous	8082A, 8270D
1710654-06	Wynn-CC-171025-EFF2	Aqueous	§, 6010C, 7470A
1710654-07	Wynn-CC-171025-EFF3	Aqueous	EPH8270, MADEP-EPH
1710654-08	Wynn-CC-171025-EFF4	Aqueous	2540D, 9040

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1710654

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1710654-01 through 1710654-08**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	( ) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	(X) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes (X) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes ( ) No (X)*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes (X) No ( )*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: November 14, 2017

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF1
Date Sampled: 10/25/17 11:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 10/30/17 15:10

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/31/17 20:10		CJ73001
Aroclor 1221	ND (0.05)		8082A		1	10/31/17 20:10		CJ73001
Aroclor 1232	ND (0.05)		8082A		1	10/31/17 20:10		CJ73001
Aroclor 1242	ND (0.05)		8082A		1	10/31/17 20:10		CJ73001
Aroclor 1248	**0.19** (0.05)		8082A		1	10/31/17 20:10		CJ73001
Aroclor 1254 [2C]	**0.17** (0.05)		8082A		1	10/31/17 20:10		CJ73001
Aroclor 1260 [2C]	**0.07** (0.05)		8082A		1	10/31/17 20:10		CJ73001
Aroclor 1262	ND (0.05)		8082A		1	10/31/17 20:10		CJ73001
Aroclor 1268	ND (0.05)		8082A		1	10/31/17 20:10		CJ73001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*64 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*92 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF1
Date Sampled: 10/25/17 11:15
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 10/27/17 18:02

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	ND (5.9)		8270D		1	10/30/17 22:58	C7J0433	CJ72710

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*63 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*99 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*79 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*81 %*		*30-130*
Surrogate: 2-Fluorophenol	*68 %*		*15-110*
Surrogate: Nitrobenzene-d5	*83 %*		*30-130*
Surrogate: Phenol-d6	*75 %*		*15-110*
Surrogate: p-Terphenyl-d14	*64 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF2
Date Sampled: 10/25/17 11:15
Percent Solids: N/A

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	**38.8** (25.0)		6010C		1	BJV	10/31/17 12:31	50	25	CJ72547
Lead	**0.051** (0.005)		§		1	SUB	11/08/17 9:59	1	1	CK71430
Mercury	ND (0.20)		7470A		1	MJV	10/27/17 12:03	20	40	CJ72550
Vanadium	**29.3** (10.0)		6010C		1	KJK	10/28/17 0:46	50	25	CJ72547

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF3
Date Sampled: 10/25/17 11:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 10/27/17 11:28

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	10/27/17 19:06	C7J0404	CJ72703
C19-C36 Aliphatics1	**103** (93)		MADEP-EPH		1	ZLC	10/27/17 19:06	C7J0404	CJ72703
C11-C22 Unadjusted Aromatics1	ND (93.5)		EPH8270		1	VSC	10/27/17 16:39	C7J0421	CJ72703
C11-C22 Aromatics1,2	ND (93.5)		EPH8270			VSC	10/27/17 16:39		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CJ72703

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*53 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*94 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*94 %*		*40-140*
Surrogate: O-Terphenyl	*77 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF4
Date Sampled: 10/25/17 11:15
Percent Solids: N/A

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-04
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.26** (N/A)		9040		1	BCA	10/25/17 21:09	S.U.	CJ72544
pH Sample Temp	**Aqueous pH measured in water at 17.0 ºC.** (N/A)								
Total Suspended Solids	**92** (10)		2540D		1	EEM	10/27/17 17:45	mg/L	CJ72714

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF1
Date Sampled: 10/25/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 10/30/17 15:10

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/31/17 20:28		CJ73001
Aroclor 1221	ND (0.05)		8082A		1	10/31/17 20:28		CJ73001
Aroclor 1232	ND (0.05)		8082A		1	10/31/17 20:28		CJ73001
Aroclor 1242	ND (0.05)		8082A		1	10/31/17 20:28		CJ73001
Aroclor 1248	ND (0.05)		8082A		1	10/31/17 20:28		CJ73001
Aroclor 1254	ND (0.05)		8082A		1	10/31/17 20:28		CJ73001
Aroclor 1260	ND (0.05)		8082A		1	10/31/17 20:28		CJ73001
Aroclor 1262	ND (0.05)		8082A		1	10/31/17 20:28		CJ73001
Aroclor 1268	ND (0.05)		8082A		1	10/31/17 20:28		CJ73001

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*101 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*104 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF1
Date Sampled: 10/25/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 10/27/17 18:02

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	ND (5.6)		8270D		1	10/30/17 23:33	C7J0433	CJ72710

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*62 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*99 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*87 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*
Surrogate: 2-Fluorophenol	*83 %*		*15-110*
Surrogate: Nitrobenzene-d5	*85 %*		*30-130*
Surrogate: Phenol-d6	*87 %*		*15-110*
Surrogate: p-Terphenyl-d14	*96 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF2
Date Sampled: 10/25/17 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (25.0)		6010C		1	KJK	10/28/17 1:23	50	25	CJ72547
Lead	**0.012** (0.005)		§		1	SUB	11/08/17 10:03	1	1	CK71430
Mercury	ND (0.20)		7470A		1	MJV	10/27/17 12:05	20	40	CJ72550
Vanadium	ND (10.0)		6010C		1	KJK	10/28/17 1:23	50	25	CJ72547

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF3
Date Sampled: 10/25/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 10/27/17 11:28

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	10/27/17 19:54	C7J0404	CJ72703
C19-C36 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	10/27/17 19:54	C7J0404	CJ72703
C11-C22 Unadjusted Aromatics1	ND (93.5)		EPH8270		1	VSC	10/27/17 17:16	C7J0421	CJ72703
C11-C22 Aromatics1,2	ND (93.5)		EPH8270			VSC	10/27/17 17:16		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CJ72703

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*70 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*90 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*88 %*		*40-140*
Surrogate: O-Terphenyl	*82 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF4
Date Sampled: 10/25/17 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-08
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.90** (N/A)		9040		1	BCA	10/25/17 21:09	S.U.	CJ72544
pH Sample Temp	**Aqueous pH measured in water at 16.2 ºC.** (N/A)								
Total Suspended Solids	**27** (5)		2540D		1	EEM	10/27/17 17:45	mg/L	CJ72714

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ72547 - 3005A/200.7										
Blank										
Arsenic	ND	25.0	ug/L							
Vanadium	ND	10.0	ug/L							
LCS										
Arsenic	223	25.0	ug/L	250.0		89	80-120			
Vanadium	257	10.0	ug/L	250.0		103	80-120			
LCS										
Arsenic	ND	25.0	ug/L	250.0		0	80-120			
LCS Dup										
Arsenic	237	25.0	ug/L	250.0		95	80-120	6	20	
Vanadium	265	10.0	ug/L	250.0		106	80-120	3	20	
LCS Dup										
Arsenic	ND	25.0	ug/L	250.0		0	80-120		20	
Batch CJ72550 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	6.00	0.20	ug/L	6.000		100	80-120			
LCS Dup										
Mercury	6.08	0.20	ug/L	6.000		101	80-120	1	20	
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ73001 - 3510C										
Blank										
Aroclor 1016	ND	0.05	ug/L							
Aroclor 1016 [2C]	ND	0.05	ug/L							
Aroclor 1221	ND	0.05	ug/L							
Aroclor 1221 [2C]	ND	0.05	ug/L							
Aroclor 1232	ND	0.05	ug/L							
Aroclor 1232 [2C]	ND	0.05	ug/L							
Aroclor 1242	ND	0.05	ug/L							
Aroclor 1242 [2C]	ND	0.05	ug/L							
Aroclor 1248	ND	0.05	ug/L							
Aroclor 1248 [2C]	ND	0.05	ug/L							
Aroclor 1254	ND	0.05	ug/L							
Aroclor 1254 [2C]	ND	0.05	ug/L							
Aroclor 1260	ND	0.05	ug/L							
Aroclor 1260 [2C]	ND	0.05	ug/L							
Aroclor 1262	ND	0.05	ug/L							
Aroclor 1262 [2C]	ND	0.05	ug/L							
Aroclor 1268	ND	0.05	ug/L							
Aroclor 1268 [2C]	ND	0.05	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ73001 - 3510C										
Surrogate: Decachlorobiphenyl	*ND*		ug/L	*0.05000*		*84*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*ND*		ug/L	*0.05000*		*67*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*ND*		ug/L	*0.05000*		*62*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*ND*		ug/L	*0.05000*		*62*	*30-150*			
LCS										
Aroclor 1016	0.89	0.05	ug/L	1.000		89	40-140			
Aroclor 1016 [2C]	0.72	0.05	ug/L	1.000		72	40-140			
Aroclor 1260	0.95	0.05	ug/L	1.000		95	40-140			
Aroclor 1260 [2C]	0.74	0.05	ug/L	1.000		74	40-140			
Surrogate: Decachlorobiphenyl	*0.0515*		ug/L	*0.05000*		*103*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0401*		ug/L	*0.05000*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0354*		ug/L	*0.05000*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0320*		ug/L	*0.05000*		*64*	*30-150*			
LCS Dup										
Aroclor 1016	0.91	0.05	ug/L	1.000		91	40-140	2	20	
Aroclor 1016 [2C]	0.76	0.05	ug/L	1.000		76	40-140	5	20	
Aroclor 1260	1.01	0.05	ug/L	1.000		101	40-140	6	20	
Aroclor 1260 [2C]	0.80	0.05	ug/L	1.000		80	40-140	7	20	
Surrogate: Decachlorobiphenyl	*0.0519*		ug/L	*0.05000*		*104*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0383*		ug/L	*0.05000*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0379*		ug/L	*0.05000*		*76*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0327*		ug/L	*0.05000*		*65*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CJ72710 - 3520C										
Blank										
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*68.2*		ug/L	*100.0*		*68*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*119*		ug/L	*150.0*		*80*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*98.5*		ug/L	*150.0*		*66*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*75.4*		ug/L	*100.0*		*75*	*30-130*			
Surrogate: 2-Fluorophenol	*92.7*		ug/L	*150.0*		*62*	*15-110*			
Surrogate: Nitrobenzene-d5	*74.3*		ug/L	*100.0*		*74*	*30-130*			
Surrogate: Phenol-d6	*100*		ug/L	*150.0*		*67*	*15-110*			
Surrogate: p-Terphenyl-d14	*78.8*		ug/L	*100.0*		*79*	*30-130*			
LCS										
bis(2-Ethylhexyl)phthalate	102	6.0	ug/L	100.0		102	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*80.4*		ug/L	*100.0*		*80*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*163*		ug/L	*150.0*		*109*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*116*		ug/L	*150.0*		*78*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*86.5*		ug/L	*100.0*		*86*	*30-130*			
Surrogate: 2-Fluorophenol	*102*		ug/L	*150.0*		*68*	*15-110*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ72710 - 3520C										
Surrogate: Nitrobenzene-d5	*110*		ug/L	*100.0*		*110*	*30-130*			
Surrogate: Phenol-d6	*122*		ug/L	*150.0*		*81*	*15-110*			
Surrogate: p-Terphenyl-d14	*106*		ug/L	*100.0*		*106*	*30-130*			
LCS Dup										
bis(2-Ethylhexyl)phthalate	112	6.0	ug/L	100.0		112	40-140	10	20	
Surrogate: 1,2-Dichlorobenzene-d4	*75.5*		ug/L	*100.0*		*76*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*156*		ug/L	*150.0*		*104*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*112*		ug/L	*150.0*		*75*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*87.2*		ug/L	*100.0*		*87*	*30-130*			
Surrogate: 2-Fluorophenol	*104*		ug/L	*150.0*		*69*	*15-110*			
Surrogate: Nitrobenzene-d5	*84.5*		ug/L	*100.0*		*85*	*30-130*			
Surrogate: Phenol-d6	*115*		ug/L	*150.0*		*77*	*15-110*			
Surrogate: p-Terphenyl-d14	*80.0*		ug/L	*100.0*		*80*	*30-130*			
Classical Chemistry										
Batch CJ72714 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	34		mg/L	34.10		100	80-120			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CJ72703 - 3510C										
Blank										
C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	100	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							
Surrogate: 1-Chlorooctadecane	*34.7*		ug/L	*50.00*		*69*	*40-140*			
Blank										

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CJ72703 - 3510C										
2-Methylnaphthalene	ND	5.0	ug/L							
Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	*46.2*		ug/L	*50.00*		*92*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*44.3*		ug/L	*50.00*		*89*	*40-140*			
Surrogate: O-Terphenyl	*39.3*		ug/L	*50.00*		*79*	*40-140*			
LCS										
C19-C36 Aliphatics1	323	100	ug/L	400.0		81	40-140			
C9-C18 Aliphatics1	192	100	ug/L	300.0		64	40-140			
Decane (C10)	27	5	ug/L	50.00		54	40-140			
Docosane (C22)	37	5	ug/L	50.00		75	40-140			
Dodecane (C12)	26	5	ug/L	50.00		53	40-140			
Eicosane (C20)	37	5	ug/L	50.00		75	40-140			
Hexacosane (C26)	38	5	ug/L	50.00		76	40-140			
Hexadecane (C16)	35	5	ug/L	50.00		70	40-140			
Hexatriacontane (C36)	39	5	ug/L	50.00		79	40-140			
Nonadecane (C19)	38	5	ug/L	50.00		76	40-140			
Nonane (C9)	21	5	ug/L	50.00		42	30-140			
Octacosane (C28)	38	5	ug/L	50.00		76	40-140			
Octadecane (C18)	36	5	ug/L	50.00		71	40-140			
Tetracosane (C24)	38	5	ug/L	50.00		75	40-140			
Tetradecane (C14)	33	5	ug/L	50.00		66	40-140			
Triacontane (C30)	38	5	ug/L	50.00		76	40-140			
Surrogate: 1-Chlorooctadecane	*34.2*		ug/L	*50.00*		*68*	*40-140*			
LCS										
2-Methylnaphthalene	36.4	5.0	ug/L	50.00		73	40-140			
Acenaphthene	40.3	5.0	ug/L	50.00		81	40-140			
Acenaphthylene	40.2	5.0	ug/L	50.00		80	40-140			

CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1710654

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CJ72703 - 3510C										
Anthracene	43.4	5.0	ug/L	50.00		87	40-140			
Benzo(a)anthracene	41.9	5.0	ug/L	50.00		84	40-140			
Benzo(a)pyrene	43.3	10.0	ug/L	50.00		87	40-140			
Benzo(b)fluoranthene	43.7	5.0	ug/L	50.00		87	40-140			
Benzo(g,h,i)perylene	34.2	10.0	ug/L	50.00		68	40-140			
Benzo(k)fluoranthene	44.6	10.0	ug/L	50.00		89	40-140			
C11-C22 Aromatics1,2	93.0	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	784	100	ug/L	850.0		92	40-140			
Chrysene	42.3	10.0	ug/L	50.00		85	40-140			
Dibenzo(a,h)Anthracene	37.4	5.0	ug/L	50.00		75	40-140			
Fluoranthene	41.6	10.0	ug/L	50.00		83	40-140			
Fluorene	40.0	5.0	ug/L	50.00		80	40-140			
Indeno(1,2,3-cd)Pyrene	39.0	5.0	ug/L	50.00		78	40-140			
Naphthalene	38.9	10.0	ug/L	50.00		78	40-140			
Phenanthrene	41.0	5.0	ug/L	50.00		82	40-140			
Pyrene	42.2	5.0	ug/L	50.00		84	40-140			
Surrogate: 2-Bromonaphthalene	*48.3*		ug/L	*50.00*		*97*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*49.3*		ug/L	*50.00*		*99*	*40-140*			
Surrogate: O-Terphenyl	*39.8*		ug/L	*50.00*		*80*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	339	100	ug/L	400.0		85	40-140	5	25	
C9-C18 Aliphatics1	202	100	ug/L	300.0		67	40-140	5	25	
Decane (C10)	27	5	ug/L	50.00		55	40-140	2	25	
Docosane (C22)	39	5	ug/L	50.00		78	40-140	5	25	
Dodecane (C12)	28	5	ug/L	50.00		55	40-140	5	25	
Eicosane (C20)	39	5	ug/L	50.00		79	40-140	5	25	
Hexacosane (C26)	40	5	ug/L	50.00		79	40-140	5	25	
Hexadecane (C16)	38	5	ug/L	50.00		76	40-140	8	25	
Hexatriacontane (C36)	42	5	ug/L	50.00		83	40-140	5	25	
Nonadecane (C19)	40	5	ug/L	50.00		79	40-140	5	25	
Nonane (C9)	21	5	ug/L	50.00		42	30-140	0.1	25	
Octacosane (C28)	40	5	ug/L	50.00		79	40-140	5	25	
Octadecane (C18)	38	5	ug/L	50.00		76	40-140	6	25	
Tetracosane (C24)	39	5	ug/L	50.00		79	40-140	5	25	
Tetradecane (C14)	35	5	ug/L	50.00		70	40-140	6	25	
Triacontane (C30)	40	5	ug/L	50.00		80	40-140	5	25	
Surrogate: 1-Chlorooctadecane	*30.5*		ug/L	*50.00*		*61*	*40-140*			
LCS Dup										
2-Methylnaphthalene	36.9	5.0	ug/L	50.00		74	40-140	1	20	
Acenaphthene	41.0	5.0	ug/L	50.00		82	40-140	2	20	
Acenaphthylene	40.3	5.0	ug/L	50.00		81	40-140	0.3	20	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CJ72703 - 3510C										
Anthracene	43.9	5.0	ug/L	50.00		88	40-140	1	20	
Benzo(a)anthracene	44.3	5.0	ug/L	50.00		89	40-140	5	20	
Benzo(a)pyrene	44.7	10.0	ug/L	50.00		89	40-140	3	20	
Benzo(b)fluoranthene	45.7	5.0	ug/L	50.00		91	40-140	5	20	
Benzo(g,h,i)perylene	35.1	10.0	ug/L	50.00		70	40-140	3	20	
Benzo(k)fluoranthene	45.0	10.0	ug/L	50.00		90	40-140	0.7	20	
C11-C22 Aromatics1,2	97.0	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	802	100	ug/L	850.0		94	40-140	2	25	
Chrysene	44.0	10.0	ug/L	50.00		88	40-140	4	20	
Dibenzo(a,h)Anthracene	38.8	5.0	ug/L	50.00		78	40-140	4	20	
Fluoranthene	41.5	10.0	ug/L	50.00		83	40-140	0.5	20	
Fluorene	41.0	5.0	ug/L	50.00		82	40-140	2	20	
Indeno(1,2,3-cd)Pyrene	40.5	5.0	ug/L	50.00		81	40-140	4	20	
Naphthalene	37.4	10.0	ug/L	50.00		75	40-140	4	20	
Phenanthrene	42.0	5.0	ug/L	50.00		84	40-140	3	20	
Pyrene	42.9	5.0	ug/L	50.00		86	40-140	2	20	
Surrogate: 2-Bromonaphthalene	*44.8*		ug/L	*50.00*		*90*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*46.1*		ug/L	*50.00*		*92*	*40-140*			
Surrogate: O-Terphenyl	*39.2*		ug/L	*50.00*		*78*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1710654

Notes and Definitions

Z16a	Aqueous pH measured in water at 17.0 ºC.
Z16	Aqueous pH measured in water at 16.2 ºC.
Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ANALYTICAL REPORT

Lab Number:	L1740393
Client:	ESS Laboratory 185 Frances Avenue Cranston, RI 02910
ATTN:	Shawn Morrell
Phone:	(401) 461-7181
Project Name:	Not Specified
Project Number:	1710460
Report Date:	11/10/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: Not Specified
Project Number: 1710460

Lab Number: L1740393
Report Date: 11/10/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1740393-01	1710460-02	WATER	Not Specified	10/18/17 12:00	11/03/17
L1740393-02	1710460-06	WATER	Not Specified	10/18/17 12:10	11/03/17
L1740393-03	1710654-02	WATER	Not Specified	10/18/17 11:15	11/03/17
L1740393-04	1710654-06	WATER	Not Specified	10/18/17 11:00	11/03/17

Project Name: Not Specified **Lab Number:** L1740393

Project Number: 1710460 **Report Date:** 11/10/17

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name: Not Specified
Project Number: 1710460
Lab Number: L1740393
Report Date: 11/10/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: Not Specified **Lab Number:** L1740393
Project Number: 1710460 **Report Date:** 11/10/17

Case Narrative (continued)

MCP Related Narratives

Total Metals

L1740393-02: The sample has elevated detection limits due to the dilution required by the high concentrations of target and non-target elements.

In reference to question G:

L1740393-02: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Cripps

Title: Technical Director/Representative Date: 11/10/17

METALS

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

SAMPLE RESULTS

Lab ID:	L1740393-01	Date Collected:	10/18/17 12:00
Client ID:	1710460-02	Date Received:	11/03/17
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	0.0181		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 09:51	EPA 3005A	97,6020A	AM

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

SAMPLE RESULTS

Lab ID:	L1740393-02	Date Collected:	10/18/17 12:10
Client ID:	1710460-06	Date Received:	11/03/17
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.0090		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 09:55	EPA 3005A	97,6020A	AM
Lead, Total	ND		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 09:55	EPA 3005A	97,6020A	AM

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

SAMPLE RESULTS

Lab ID:	L1740393-03	Date Collected:	10/18/17 11:15
Client ID:	1710654-02	Date Received:	11/03/17
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	0.0511		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 09:59	EPA 3005A	97,6020A	AM

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

SAMPLE RESULTS

Lab ID:	L1740393-04	Date Collected:	10/18/17 11:00
Client ID:	1710654-06	Date Received:	11/03/17
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	0.0117		mg/l	0.0050	--	10	11/07/17 13:10	11/08/17 10:03	EPA 3005A	97,6020A	AM

Project Name: Not Specified
Project Number: 1710460
Lab Number: L1740393
Report Date: 11/10/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1060416-1										
Arsenic, Total	ND		mg/l	0.0005	--	1	11/07/17 13:10	11/08/17 09:40	97,6020A	AM
Lead, Total	ND		mg/l	0.0005	--	1	11/07/17 13:10	11/08/17 09:40	97,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 1710460

Lab Number: L1740393
Report Date: 11/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060416-2 WG1060416-3								
Arsenic, Total	106		108		80-120	2		20
Lead, Total	109		110		80-120	1		20

Project Name: Not Specified
Project Number: 1710460

Lab Number: L1740393
Report Date: 11/10/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1740393-01A	Plastic 250ml HNO3 preserved	A	<2	<2	11.4	Y	Absent		MCP-PB-6020T-10(180)
L1740393-02A	Plastic 250ml HNO3 preserved	A	<2	<2	11.4	Y	Absent		MCP-AS-6020T-10(180),MCP-PB-6020T-10(180)
L1740393-03A	Plastic 250ml HNO3 preserved	A	<2	<2	11.4	Y	Absent		MCP-PB-6020T-10(180)
L1740393-04A	Plastic 250ml HNO3 preserved	A	<2	<2	11.4	Y	Absent		MCP-PB-6020T-10(180)

*Values in parentheses indicate holding time in days

Project Name:	Not Specified	**Lab Number:**	L1740393
Project Number:	1710460	**Report Date:**	11/10/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Project Name: Not Specified **Lab Number:** L1740393

Project Number: 1710460 **Report Date:** 11/10/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: Not Specified
Project Number: 1710460
Lab Number: L1740393
Report Date: 11/10/17

REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L1740393

ESS Laboratory **Alpha**

Division of Thielsch Engineering, Inc.

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CHAIN OF CUSTODY

ESS Lab # 1710460

Turn Time __x__ Standard Other_____

Reporting Limits - _____NRWQC (SW)_____

Regulatory State: MA RI CT NH NJ NY ME Other_____

Electonic Deliverables Excel Access PDF

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Co. Name: ESS Laboratory	Project #:	Project Name: 1710460	
Contact Person: Shawn Morrell	Proj. Location:		
Address: 185 Frances Ave	Cranston, RI	Zip: 02910	PO #: B2473
Tel.: ext 3083	email: smorrell@thielsch.com	email:	

Analysis

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container		Lead	Arsenic						
40393.01	10/1817	1200	Grab	Aq	1710460-02						X							
.02	10/18/17	1210	Grab	Aq	1710460-06						X	X						
.03	10/25/17	1115	Grab	Aq	1710654-02						X							
.04	10/25/17	1100	Grab	Aq	1710654-06						X							

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: SALT WATER MRL - Pb <8.1ppb, AS <36 ppb

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
15:16 11/3/17	11/3/17 AAL 15:16		
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1710654
Date Received: 10/25/2017
Project Due Date: 11/1/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.0 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	176101	Yes	NA	Yes	1L Amber - Unpres	NP	
01	176102	Yes	NA	Yes	1L Amber - Unpres	NP	
02	176107	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
03	176099	Yes	NA	Yes	1L Amber - Unpres	NP	
03	176100	Yes	NA	Yes	1L Amber - Unpres	NP	
04	176105	Yes	NA	Yes	1L Poly - Unpres	NP	
05	176097	Yes	NA	Yes	1L Amber - Unpres	NP	
05	176098	Yes	NA	Yes	1L Amber - Unpres	NP	
06	176106	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
07	176095	Yes	NA	Yes	1L Amber - Unpres	NP	
07	176096	Yes	NA	Yes	1L Amber - Unpres	NP	
08	176104	Yes	NA	Yes	1L Poly - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 10/25/17 1903
Reviewed By: Date & Time: 10/25/17 1953
Delivered By: 10/25/17 1953

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time: 5-Day (circled) Rush
Regulatory State:
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

ESS Lab #: 1710654
Reporting Limits: NRWQC (SW)
Electonic Deliverables: ☐ Limit Checker ☐ Other (Please Specify) ☑ Standard Excel

Company Name: SPS New England Inc
Contact Person: Katherine Mason
City: Salisbury
State: MA
Telephone Number: 6176087317
FAX Number:
Project #: 454
Project Name: Wynn Dredging
Address: 98 Elm Street
Zip Code: 01952
PO #:
Email Address: KMason@Charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	METALS (arsenic, lead, mercury, vanadium)	TSS	PH	EPH	PCBs	SVOCs (biethylene, phthalate)			Sub Pb							
1	10/25/17	11:15	GRAB	AQ	Wynn-CC-171025-INF-1					2	2										
2	"	"	"	"	INF-2	1								x							
3	"	"	"	"	INF-3				2												
4	"	"	"	"	INF-4		1	1													
5	"	11:00	"	"	EFF-1					2	2										
6	"	"	"	"	EFF-2	1								x							
7	"	"	"	"	EFF-3				2												
8	"	"	"	"	EFF-4		1	1													
					Changes made -11/3/17 - ML																

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	G - Glass	O-Other	P-Poly	S-Sterile	V-Vial	P	P	P	P	AG	AG						
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*	3	6	6	6	6	6				
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Other*	4	1	1	1	1	1				
Number of Containers per Sample:																					

Laboratory Use Only

Cooler Present: _____
Seals Intact: _____
Cooler Temperature: °C

Sampled by: Meaghan Clifford

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

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CHAIN OF CUSTODY

ESS Lab # 1710654

Turn Time (5-Day) Rush
Regulatory State
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP
Reporting Limits
Electonic Deliverables ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name: Charter Contracting
Contact Person:
Project #: 454
Project Name: Wynn Dredge
Address: 95 Behan St.
City: Everett
State: ~~Everett~~ MA
Zip Code: 02149
PO #:
Telephone Number: 508-815-0480
FAX Number:
Email Address: tlewis@charter.us

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	EPA PAH	Metals	TSS	Turbidity	PH	EPH
1	10/25/17	11:15	Grab	water	Wynn-CC-171025-INF1	2					
2	10/25/17	11:15	grab	water	Wynn-CC-171025-INF2		1				
3	10/25/17	11:15	grab	water	Wynn-CC-171025-INF3						2
4	10/25/17	11:15	grab	water	Wynn-CC-171025-INF4			1	1	1	
5	10/25/17	11:00	grab	water	Wynn-CC-171025 ~~[illegible]~~ -EFF1	2					
6	10/25/17	11:00	grab	water	Wynn-CC-171025-EFF2		1				
7	10/25/17	11:00	grab	water	Wynn-CC-171025-EFF3						2
8	10/25/17	11:00	grab	water	Wynn-CC-171025-EFF4			1	1	1	

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

	EPA PAH	Metals	TSS	Turbidity	PH	EPH
Container Type:	AG	P	P	P	P	AG
Preservation Code:	1	4	1	1	1	2
Number of Containers per Sample:	2	3	3	2	2	

Laboratory Use Only
Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 2.0

Sampled by: [signature]
Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 13:16 10/25/17	[signature] 13:16 10/25/17	[signature] 17:31 10/25/17	[signature] 10/25/17 1850
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

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CHAIN OF CUSTODY

Turn Time: 5-Day (circled) Rush
Regulatory State:
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

ESS Lab #: 1710654
Reporting Limits: NRWQC (SW)
Electonic Deliverables: ☐ Limit Checker ☐ Other (Please Specify) ☑ Standard Excel

Company Name: SPS New England Inc
Contact Person: Katherine Mason
City: Salisbury
State: MA
Telephone Number: 6176087317
FAX Number:
Project #: 454
Project Name: Wynn Dredging
Address: 98 Elm Street
Zip Code: 01952
PO #:
Email Address: Kmason@Charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	METALS (arsenic, lead, mercury, vanadium)	TSS	PH	EPH	PCBs	SVOCs (biethylene, phthalate)
1	10/25/17	11:15	GRAB	AQ	Wynn-CC-171025-INF-1					2	2
2	"	"	"	"	INF-2	1					
3	"	"	"	"	INF-3				2		
4	"	"	"	"	INF-4		1	1			
5	"	11:00	"	"	EFF-1					2	2
6	"	"	"	"	EFF-2	1					
7	"	"	"	"	EFF-3				2		
8	"	"	"	"	EFF-4		1	1			

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial	P	P	P	P	AG	AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*	3	6	6	6	6	6
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*	4	1	1	1	1	1
Number of Containers per Sample:						

Laboratory Use Only

Cooler Present: _____
Seals Intact: _____
Cooler Temperature: °C

Sampled by: Meaghan Clifford

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

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CHAIN OF CUSTODY

Turn Time: 5-Day Rush
Regulatory State
Is this project for any of the following?: CT RCP MA MCP RGP

ESS Lab # 1710654
Reporting Limits
Electonic Deliverables: Limit Checker; Standard Excel; Other (Please Specify →)

Company Name	Project #	Project Name
Charter Contracting	454	Wynn Dredge

Contact Person	Address	
	95 Behen St.	

City	State	Zip Code	PO #
Everett	~~Everett~~ MA	02149	

Telephone Number	FAX Number	Email Address
508-818-0480		tlewis@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	EA PAH	Metals	TSS	Turb.d.ty	PH	EPH
1	10/25/17	11:15	Grab	water	Wynn-CC-171025-INF1	2					
2	10/25/17	11:15	grab	water	Wynn-CC-171025-INF2		1				
3	10/25/17	11:15	grab	water	Wynn-CC-171025-INF3						2
4	10/25/17	11:15	grab	water	Wynn-CC-171025-INF4			1	1	1	
5	10/25/17	11:00	grab	water	Wynn-CC-171025 ~~[illegible]~~-EFF1	2					
6	10/25/17	11:00	grab	water	Wynn-CC-171025-EFF2		1				
7	10/25/17	11:00	grab	water	Wynn-CC-171025-EFF3						2
8	10/25/17	11:00	grab	water	Wynn-CC-171025-EFF4			1	1	1	
Container Type:	AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial					AG	P	P	P	P	AG
Container Volume:	1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*										
Preservation Code:	1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*					1	4	1	1	1	1
					Number of Containers per Sample:	2	3	2	2	2	

Laboratory Use Only
Cooler Present: yes
Seals Intact: N/A
Cooler Temperature: °C ice temp: 2.0

Sampled by: [signature]
Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 13:16 10/25/17	[signature] 13:16 10/25/17	[signature] 17:31 10/25/17	[signature] 10/25/17 1850
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Dredging (454)
ESS Laboratory Work Order Number: 1711036

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 2:14 pm, Nov 10, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

SAMPLE RECEIPT

The following samples were received on November 01, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals, SVOA, and EPH were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
1711036-01	171101-Wynn-CC-Influent 1	Aqueous	8082A, 8270D
1711036-02	171101-Wynn-CC-Influent 2	Aqueous	6010C, 6020A, 7010, 7470A
1711036-03	171101-Wynn-CC-Influent 3	Aqueous	EPH8270, MADEP-EPH
1711036-04	171101-Wynn-CC-Influent 4	Aqueous	2540D, 9040
1711036-05	171101-Wynn-CC-Effluent 1	Aqueous	8082A, 8270D
1711036-06	171101-Wynn-CC-Effluent 2	Aqueous	6010C, 6020A, 7010, 7470A
1711036-07	171101-Wynn-CC-Effluent 3	Aqueous	EPH8270, MADEP-EPH
1711036-08	171101-Wynn-CC-Effluent 4	Aqueous	2540D, 9040

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1711036-01 **Surrogate recovery(ies) above upper control limit (S+).**
Tetrachloro-m-xylene (249% @ 30-150%)

8270D Semi-Volatile Organic Compounds

CK70220-BS1 **Blank Spike recovery is above upper control limit (B+).**
Phenol-d6 (118% @ 15-110%)

MADEP-EPH Extractable Petroleum Hydrocarbons

C7K0151-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Benzo(g,h,i)perylene (38% @ 20%), Dibenzo(a,h)Anthracene (27% @ 20%), Indeno(1,2,3-cd)Pyrene (29% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711036-01 through 1711036-08**

Matrices: (x) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

(x) 8260 VOC CAM II A	(x) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(x) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(x) 8270 SVOC CAM II B	(x) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	( ) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(x) 6010 Metals CAM III A	(x) 6020 Metals CAM III D	(x) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (x) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (x) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (x) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (x) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes (x) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (x) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	Yes (x) No ( )*
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (x)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (x)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard
Date: November 10, 2017
Printed Name: Laurel Stoddard
Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 1
Date Sampled: 11/01/17 13:40
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/2/17 9:50

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	11/02/17 17:06		CK70301
Aroclor 1221	ND (0.09)		8082A		1	11/02/17 17:06		CK70301
Aroclor 1232	ND (0.09)		8082A		1	11/02/17 17:06		CK70301
Aroclor 1242	ND (0.09)		8082A		1	11/02/17 17:06		CK70301
Aroclor 1248 [2C]	**1.56** (0.09)		8082A		1	11/02/17 17:06		CK70301
Aroclor 1254 [2C]	**1.23** (0.09)		8082A		1	11/02/17 17:06		CK70301
Aroclor 1260	**0.28** (0.09)		8082A		1	11/02/17 17:06		CK70301
Aroclor 1262	ND (0.09)		8082A		1	11/02/17 17:06		CK70301
Aroclor 1268	ND (0.09)		8082A		1	11/02/17 17:06		CK70301

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*40 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*44 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*249 %*	*S+*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 1
Date Sampled: 11/01/17 13:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 11/2/17 18:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	**349** (22.4)		8270D		4	11/07/17 18:07	C7K0125	CK70220

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*82 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*81 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*82 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*92 %*		*30-130*
Surrogate: 2-Fluorophenol	*74 %*		*15-110*
Surrogate: Nitrobenzene-d5	*85 %*		*30-130*
Surrogate: Phenol-d6	*83 %*		*15-110*
Surrogate: p-Terphenyl-d14	*82 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 2
Date Sampled: 11/01/17 13:40
Percent Solids: N/A

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (25.0)		7010		5	KJK	11/09/17 18:04	10	10	CK70233
Lead	ND (5.0)		6020A		5	NAR	11/02/17 16:17	10	10	CK70233
Mercury	ND (0.20)		7470A		1	MJV	11/02/17 12:06	20	40	CK70128
Vanadium	ND (100)		6010C		5	KJK	11/02/17 23:09	10	10	CK70233

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 3
Date Sampled: 11/01/17 13:45
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/2/17 14:20

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (99)		MADEP-EPH		1	ZLC	11/02/17 21:56	C7K0030	CK70213
C19-C36 Aliphatics1	**176** (99)		MADEP-EPH		1	ZLC	11/02/17 21:56	C7K0030	CK70213
C11-C22 Unadjusted Aromatics1	ND (99.0)		EPH8270		1	VSC	11/03/17 0:07	C7K0041	CK70213
C11-C22 Aromatics1,2	ND (99.0)		EPH8270			VSC	11/03/17 0:07		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CK70213

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*75 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*91 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*88 %*		*40-140*
Surrogate: O-Terphenyl	*68 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 4
Date Sampled: 11/01/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-04
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.35** (N/A)		9040		1	BCA	11/01/17 21:30	S.U.	CK70145
pH Sample Temp	**Aqueous pH measured in water at 14.7 ºC.** (N/A)								
Total Suspended Solids	**69** (5)		2540D		1	EEM	11/02/17 17:20	mg/L	CK70210

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 1
Date Sampled: 11/01/17 14:00
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/2/17 9:50

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.10)		8082A		1	11/02/17 14:46		CK70103
Aroclor 1221	ND (0.10)		8082A		1	11/02/17 14:46		CK70103
Aroclor 1232	ND (0.10)		8082A		1	11/02/17 14:46		CK70103
Aroclor 1242	ND (0.10)		8082A		1	11/02/17 14:46		CK70103
Aroclor 1248	ND (0.10)		8082A		1	11/02/17 14:46		CK70103
Aroclor 1254	ND (0.10)		8082A		1	11/02/17 14:46		CK70103
Aroclor 1260	ND (0.10)		8082A		1	11/02/17 14:46		CK70103
Aroclor 1262	ND (0.10)		8082A		1	11/02/17 14:46		CK70103
Aroclor 1268	ND (0.10)		8082A		1	11/02/17 14:46		CK70103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*72 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 1
Date Sampled: 11/01/17 14:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 11/2/17 18:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	ND (6.0)		8270D		1	11/07/17 18:41	C7K0125	CK70220

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*85 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*82 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*89 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*98 %*		*30-130*
Surrogate: 2-Fluorophenol	*80 %*		*15-110*
Surrogate: Nitrobenzene-d5	*95 %*		*30-130*
Surrogate: Phenol-d6	*93 %*		*15-110*
Surrogate: p-Terphenyl-d14	*124 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 2
Date Sampled: 11/01/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (25.0)		7010		5	KJK	11/09/17 18:09	10	10	CK70233
Lead	ND (5.0)		6020A		5	NAR	11/02/17 16:23	10	10	CK70233
Mercury	ND (0.20)		7470A		1	MJV	11/02/17 12:08	20	40	CK70128
Vanadium	ND (100)		6010C		5	KJK	11/02/17 23:13	10	10	CK70233

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 3
Date Sampled: 11/01/17 13:45
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/2/17 14:20

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (94)		MADEP-EPH		1	ZLC	11/02/17 22:43	C7K0030	CK70213
C19-C36 Aliphatics1	ND (94)		MADEP-EPH		1	ZLC	11/02/17 22:43	C7K0030	CK70213
C11-C22 Unadjusted Aromatics1	ND (94.3)		EPH8270		1	ZLC	11/08/17 18:47	C7K0151	CK70213
C11-C22 Aromatics1,2	ND (94.3)		EPH8270			ZLC	11/08/17 18:47		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CK70213

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*76 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*103 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*100 %*		*40-140*
Surrogate: O-Terphenyl	*76 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 4
Date Sampled: 11/01/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-08
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.91** (N/A)		9040		1	BCA	11/01/17 21:30	S.U.	CK70145
pH Sample Temp	**Aqueous pH measured in water at 14.3 ºC.** (N/A)								
Total Suspended Solids	**36** (5)		2540D		1	EEM	11/02/17 17:20	mg/L	CK70210

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CK70128 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.93	0.20	ug/L	6.000		99	80-120			
LCS Dup										
Mercury	6.03	0.20	ug/L	6.000		100	80-120	2	20	
Batch CK70233 - 200.7/6010BNoDigest										
Blank										
Arsenic	ND	5.0	ug/L							
Lead	ND	1.0	ug/L							
Blank										
Lead	ND	1.0	ug/L							
Vanadium	ND	20.0	ug/L							
LCS										
Vanadium	0.5		mg/L	0.5000		100	80-120			
LCS										
Lead	21.0		ug/L	20.00		105	80-120			
LCS										
Arsenic	24.2		ug/L	25.00		97	80-120			
8082A Polychlorinated Biphenyls (PCB)										
Batch CK70103 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1016 [2C]	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1221 [2C]	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1232 [2C]	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1242 [2C]	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK70103 - 3510C										
Aroclor 1268 [2C]	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0408*		ug/L	*0.05000*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0423*		ug/L	*0.05000*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0279*		ug/L	*0.05000*		*56*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0319*		ug/L	*0.05000*		*64*	*30-150*			
LCS										
Aroclor 1016	0.83	0.10	ug/L	1.000		83	40-140			
Aroclor 1016 [2C]	0.91	0.10	ug/L	1.000		91	40-140			
Aroclor 1260	0.86	0.10	ug/L	1.000		86	40-140			
Aroclor 1260 [2C]	0.96	0.10	ug/L	1.000		96	40-140			
Surrogate: Decachlorobiphenyl	*0.0534*		ug/L	*0.05000*		*107*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0563*		ug/L	*0.05000*		*113*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0400*		ug/L	*0.05000*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0415*		ug/L	*0.05000*		*83*	*30-150*			
LCS Dup										
Aroclor 1016	0.86	0.10	ug/L	1.000		86	40-140	3	20	
Aroclor 1016 [2C]	0.93	0.10	ug/L	1.000		93	40-140	2	20	
Aroclor 1260	0.88	0.10	ug/L	1.000		88	40-140	2	20	
Aroclor 1260 [2C]	0.97	0.10	ug/L	1.000		97	40-140	1	20	
Surrogate: Decachlorobiphenyl	*0.0474*		ug/L	*0.05000*		*95*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0489*		ug/L	*0.05000*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0365*		ug/L	*0.05000*		*73*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0376*		ug/L	*0.05000*		*75*	*30-150*			
Batch CK70301 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1016 [2C]	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1221 [2C]	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1232 [2C]	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1242 [2C]	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK70301 - 3510C										
Aroclor 1268 [2C]	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0421*		ug/L	*0.05000*		*84*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0433*		ug/L	*0.05000*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0300*		ug/L	*0.05000*		*60*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0338*		ug/L	*0.05000*		*68*	*30-150*			
LCS										
Aroclor 1016	1.02	0.10	ug/L	1.000		102	40-140			
Aroclor 1016 [2C]	0.96	0.10	ug/L	1.000		96	40-140			
Aroclor 1260	0.98	0.10	ug/L	1.000		98	40-140			
Aroclor 1260 [2C]	0.95	0.10	ug/L	1.000		95	40-140			
Surrogate: Decachlorobiphenyl	*0.0549*		ug/L	*0.05000*		*110*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0551*		ug/L	*0.05000*		*110*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0427*		ug/L	*0.05000*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0456*		ug/L	*0.05000*		*91*	*30-150*			
LCS Dup										
Aroclor 1016	0.97	0.10	ug/L	1.000		97	40-140	4	20	
Aroclor 1016 [2C]	0.92	0.10	ug/L	1.000		92	40-140	4	20	
Aroclor 1260	0.96	0.10	ug/L	1.000		96	40-140	2	20	
Aroclor 1260 [2C]	0.94	0.10	ug/L	1.000		94	40-140	0.6	20	
Surrogate: Decachlorobiphenyl	*0.0478*		ug/L	*0.05000*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0480*		ug/L	*0.05000*		*96*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0385*		ug/L	*0.05000*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0395*		ug/L	*0.05000*		*79*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CK70220 - 3520C										
Blank										
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*78.5*		ug/L	*100.0*		*79*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*141*		ug/L	*150.0*		*94*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*127*		ug/L	*150.0*		*85*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*89.3*		ug/L	*100.0*		*89*	*30-130*			
Surrogate: 2-Fluorophenol	*124*		ug/L	*150.0*		*83*	*15-110*			
Surrogate: Nitrobenzene-d5	*89.2*		ug/L	*100.0*		*89*	*30-130*			
Surrogate: Phenol-d6	*134*		ug/L	*150.0*		*90*	*15-110*			
Surrogate: p-Terphenyl-d14	*105*		ug/L	*100.0*		*105*	*30-130*			
LCS										
bis(2-Ethylhexyl)phthalate	108	6.0	ug/L	100.0		108	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*81.8*		ug/L	*100.0*		*82*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*163*		ug/L	*150.0*		*109*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*152*		ug/L	*150.0*		*101*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*77.6*		ug/L	*100.0*		*78*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK70220 - 3520C										
Surrogate: 2-Fluorophenol	*124*		ug/L	*150.0*		*83*	*15-110*			
Surrogate: Nitrobenzene-d5	*91.5*		ug/L	*100.0*		*91*	*30-130*			
Surrogate: Phenol-d6	*178*		ug/L	*150.0*		*118*	*15-110*			*B+*
Surrogate: p-Terphenyl-d14	*103*		ug/L	*100.0*		*103*	*30-130*			
LCS Dup										
bis(2-Ethylhexyl)phthalate	105	6.0	ug/L	100.0		105	40-140	2	20	
Surrogate: 1,2-Dichlorobenzene-d4	*83.3*		ug/L	*100.0*		*83*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*158*		ug/L	*150.0*		*105*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*121*		ug/L	*150.0*		*80*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*94.6*		ug/L	*100.0*		*95*	*30-130*			
Surrogate: 2-Fluorophenol	*148*		ug/L	*150.0*		*99*	*15-110*			
Surrogate: Nitrobenzene-d5	*90.8*		ug/L	*100.0*		*91*	*30-130*			
Surrogate: Phenol-d6	*125*		ug/L	*150.0*		*83*	*15-110*			
Surrogate: p-Terphenyl-d14	*106*		ug/L	*100.0*		*106*	*30-130*			
Classical Chemistry										
Batch CK70210 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	34		mg/L	34.10		100	80-120			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK70213 - 3510C										
Blank										
C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	100	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							
Surrogate: 1-Chlorooctadecane	*42.9*		ug/L	*50.00*		*86*	*40-140*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK70213 - 3510C										
Blank										
2-Methylnaphthalene	ND	5.0	ug/L							
Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	*44.2*		ug/L	*50.00*		*88*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*42.0*		ug/L	*50.00*		*84*	*40-140*			
Surrogate: O-Terphenyl	*38.1*		ug/L	*50.00*		*76*	*40-140*			
LCS										
C19-C36 Aliphatics1	378	100	ug/L	400.0		95	40-140			
C9-C18 Aliphatics1	228	100	ug/L	300.0		76	40-140			
Decane (C10)	32	5	ug/L	50.00		65	40-140			
Docosane (C22)	48	5	ug/L	50.00		95	40-140			
Dodecane (C12)	37	5	ug/L	50.00		74	40-140			
Eicosane (C20)	47	5	ug/L	50.00		94	40-140			
Hexacosane (C26)	48	5	ug/L	50.00		97	40-140			
Hexadecane (C16)	43	5	ug/L	50.00		87	40-140			
Hexatriacontane (C36)	45	5	ug/L	50.00		90	40-140			
Nonadecane (C19)	47	5	ug/L	50.00		95	40-140			
Nonane (C9)	26	5	ug/L	50.00		52	30-140			
Octacosane (C28)	49	5	ug/L	50.00		98	40-140			
Octadecane (C18)	45	5	ug/L	50.00		89	40-140			
Tetracosane (C24)	48	5	ug/L	50.00		96	40-140			
Tetradecane (C14)	40	5	ug/L	50.00		81	40-140			
Triacontane (C30)	50	5	ug/L	50.00		100	40-140			
Surrogate: 1-Chlorooctadecane	*44.8*		ug/L	*50.00*		*90*	*40-140*			
LCS										
2-Methylnaphthalene	35.9	5.0	ug/L	50.00		72	40-140			
Acenaphthene	39.1	5.0	ug/L	50.00		78	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK70213 - 3510C										
Acenaphthylene	40.6	5.0	ug/L	50.00		81	40-140			
Anthracene	42.4	5.0	ug/L	50.00		85	40-140			
Benzo(a)anthracene	42.2	5.0	ug/L	50.00		84	40-140			
Benzo(a)pyrene	41.8	10.0	ug/L	50.00		84	40-140			
Benzo(b)fluoranthene	42.0	5.0	ug/L	50.00		84	40-140			
Benzo(g,h,i)perylene	37.9	10.0	ug/L	50.00		76	40-140			
Benzo(k)fluoranthene	42.4	10.0	ug/L	50.00		85	40-140			
C11-C22 Aromatics1,2	127	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	814	100	ug/L	850.0		96	40-140			
Chrysene	40.8	10.0	ug/L	50.00		82	40-140			
Dibenzo(a,h)Anthracene	39.8	5.0	ug/L	50.00		80	40-140			
Fluoranthene	40.7	10.0	ug/L	50.00		81	40-140			
Fluorene	39.1	5.0	ug/L	50.00		78	40-140			
Indeno(1,2,3-cd)Pyrene	42.0	5.0	ug/L	50.00		84	40-140			
Naphthalene	39.4	10.0	ug/L	50.00		79	40-140			
Phenanthrene	40.7	5.0	ug/L	50.00		81	40-140			
Pyrene	41.1	5.0	ug/L	50.00		82	40-140			
Surrogate: 2-Bromonaphthalene	*45.6*		ug/L	*50.00*		*91*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*44.8*		ug/L	*50.00*		*90*	*40-140*			
Surrogate: O-Terphenyl	*39.2*		ug/L	*50.00*		*78*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	346	100	ug/L	400.0		87	40-140	9	25	
C9-C18 Aliphatics1	194	100	ug/L	300.0		65	40-140	16	25	
Decane (C10)	26	5	ug/L	50.00		52	40-140	22	25	
Docosane (C22)	44	5	ug/L	50.00		88	40-140	8	25	
Dodecane (C12)	31	5	ug/L	50.00		61	40-140	18	25	
Eicosane (C20)	43	5	ug/L	50.00		87	40-140	9	25	
Hexacosane (C26)	44	5	ug/L	50.00		89	40-140	8	25	
Hexadecane (C16)	37	5	ug/L	50.00		75	40-140	15	25	
Hexatriacontane (C36)	41	5	ug/L	50.00		83	40-140	8	25	
Nonadecane (C19)	43	5	ug/L	50.00		86	40-140	9	25	
Nonane (C9)	20	5	ug/L	50.00		41	30-140	24	25	
Octacosane (C28)	45	5	ug/L	50.00		90	40-140	8	25	
Octadecane (C18)	40	5	ug/L	50.00		80	40-140	11	25	
Tetracosane (C24)	44	5	ug/L	50.00		89	40-140	8	25	
Tetradecane (C14)	34	5	ug/L	50.00		69	40-140	16	25	
Triacontane (C30)	46	5	ug/L	50.00		92	40-140	8	25	
Surrogate: 1-Chlorooctadecane	*42.6*		ug/L	*50.00*		*85*	*40-140*			
LCS Dup										
2-Methylnaphthalene	32.0	5.0	ug/L	50.00		64	40-140	12	20	
Acenaphthene	33.7	5.0	ug/L	50.00		67	40-140	15	20	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK70213 - 3510C										
Acenaphthylene	34.9	5.0	ug/L	50.00		70	40-140	15	20	
Anthracene	36.0	5.0	ug/L	50.00		72	40-140	16	20	
Benzo(a)anthracene	35.5	5.0	ug/L	50.00		71	40-140	17	20	
Benzo(a)pyrene	35.3	10.0	ug/L	50.00		71	40-140	17	20	
Benzo(b)fluoranthene	35.6	5.0	ug/L	50.00		71	40-140	17	20	
Benzo(g,h,i)perylene	33.7	10.0	ug/L	50.00		67	40-140	12	20	
Benzo(k)fluoranthene	35.7	10.0	ug/L	50.00		71	40-140	17	20	
C11-C22 Aromatics1,2	107	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	699	100	ug/L	850.0		82	40-140	15	25	
Chrysene	35.6	10.0	ug/L	50.00		71	40-140	13	20	
Dibenzo(a,h)Anthracene	34.5	5.0	ug/L	50.00		69	40-140	14	20	
Fluoranthene	35.2	10.0	ug/L	50.00		70	40-140	15	20	
Fluorene	33.7	5.0	ug/L	50.00		67	40-140	15	20	
Indeno(1,2,3-cd)Pyrene	36.8	5.0	ug/L	50.00		74	40-140	13	20	
Naphthalene	34.6	10.0	ug/L	50.00		69	40-140	13	20	
Phenanthrene	34.0	5.0	ug/L	50.00		68	40-140	18	20	
Pyrene	35.5	5.0	ug/L	50.00		71	40-140	15	20	
Surrogate: 2-Bromonaphthalene	*44.7*		ug/L	*50.00*		*89*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*44.7*		ug/L	*50.00*		*89*	*40-140*			
Surrogate: O-Terphenyl	*35.4*		ug/L	*50.00*		*71*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging ESS Laboratory Work Order: 1711036

Notes and Definitions

Z16a	Aqueous pH measured in water at 14.7 ºC.
Z16	Aqueous pH measured in water at 14.3 ºC.
Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
D	Diluted.
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
B+	Blank Spike recovery is above upper control limit (B+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711036
Date Received: 11/1/2017
Project Due Date: 11/8/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.5 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	177787	Yes	NA	Yes	1L Amber - Unpres	NP	
01	177788	Yes	NA	Yes	1L Amber - Unpres	NP	
02	177794	Yes	NA	Yes	250 mL Poly - Unpres	NP	
03	177790	Yes	NA	Yes	1L Amber - HCl	HCl	
04	177792	Yes	NA	Yes	1L Poly - Unpres	NP	
04	177960	Yes	NA	Yes	1L Poly - Unpres	NP	
05	177783	Yes	NA	Yes	1L Amber - Unpres	NP	
05	177784	Yes	NA	Yes	1L Amber - Unpres	NP	
06	177793	Yes	NA	Yes	250 mL Poly - Unpres	NP	
07	177789	Yes	NA	Yes	1L Amber - HCl	HCl	
08	177791	Yes	NA	Yes	1L Poly - Unpres	NP	
08	177959	Yes	NA	Yes	1L Poly - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 11/1/17 1950
Reviewed By: Date & Time: 11/1/17 2004
Delivered By: 11/1/17 2004

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1711036

Turn Time (5-Day) Rush

Regulatory State

Reporting Limits NRWQC(SW)

Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Electonic Deliverables ☐Limit Checker ☑Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
SPS New England/ Charter Contracting Co, LLC	454	Wynn Dredging

Contact Person	Address
Katherine Mason	98 Elm St

City	State	Zip Code	PO #
Salisbury	MA	01952	

Telephone Number	FAX Number	Email Address
617-608-7317		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Dissolved Metals (Arsenic, Lead, Mercury, Vanadium)	TSS	pH	EPH	PCBs	sVOCs (2-ethylhexyl phthalate)
01	11/1/17	13:40	Grab	Aqueous	171101-Wynn-CC-Influent-1					2	2
02	11/1/17	13:40	Grab	Aqueous	171101-Wynn-CC-Influent-2	1					
03	11/1/17	13:45	Grab	Aqueous	171101-Wynn-CC-Influent-3				2		
04	11/1/17	13:45	Grab	Aqueous	171101-Wynn-CC-Influent-4		1	1			
05	11/1/17	14:00	Grab	Aqueous	171101-Wynn-CC-Effluent-1					2	2
06	11/1/17	13:45	Grab	Aqueous	171101-Wynn-CC-Effluent-2	1					
07	11/1/17	13:45	Grab	Aqueous	171101-Wynn-CC-Effluent-3				2		
08	11/1/17	13:45	Grab	Aqueous	171101-Wynn-CC-Effluent-4		1	1			

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	G - Glass	O-Other	P-Poly	S-Sterile	V-Vial	P	P	P	AG	AG	AG
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*	3	6	6	6	6	6
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Other*	1	1	1	2	1	1
Number of Containers per Sample:																	

Laboratory Use Only

Cooler Present: Yes

Seals Intact: NA

Cooler Temperature: °C ice temp: 1.5

Sampled by : Meghan Clifford

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 11/1/17 15:26	[signature] 11/1/17 15:26	[signature] 11/1/17 18:41	[signature] 11/1/17 1945
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Dredging (454)
ESS Laboratory Work Order Number: 1711289

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:25 pm, Nov 17, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

SAMPLE RECEIPT

The following samples were received on November 09, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals, SVOA, and EPH were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
1711289-01	171101-Wynn-CC-Influent-1	Aqueous	8082A, 8270D
1711289-02	171101-Wynn-CC-Influent-2	Aqueous	6010C, 6020A, 7010, 7470A
1711289-03	171101-Wynn-CC-Influent-3	Aqueous	EPH8270, MADEP-EPH
1711289-04	171101-Wynn-CC-Influent-4	Aqueous	2540D, 9040
1711289-05	171101-Wynn-CC-Effluent-1	Aqueous	8082A, 8270D
1711289-06	171101-Wynn-CC-Effluent-2	Aqueous	6010C, 6020A, 7010, 7470A
1711289-07	171101-Wynn-CC-Effluent-3	Aqueous	EPH8270, MADEP-EPH
1711289-08	171101-Wynn-CC-Effluent-4	Aqueous	2540D, 9040

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711289

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1711289-01 **Lower value is used due to matrix interferences (LC).**
Aroclor 1260 [2C]

1711289-01 **Percent difference between primary and confirmation results exceeds 40% (P).**
Aroclor 1260 [2C]

8270D Semi-Volatile Organic Compounds

C7K0194-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2-Chlorophenol-d4 (26% @ 20%)

MADEP-EPH Extractable Petroleum Hydrocarbons

C7K0240-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Dibenzo(a,h)Anthracene (21% @ 20%)

CK71003-BSD2 **Relative percent difference for duplicate is outside of criteria (D+).**
2-Methylnaphthalene (21% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711289-01 through 1711289-08**

Matrices: ( ) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air (X) Other: Aqueous

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	(X) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	( ) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	(X) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes (X) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for '"Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: November 17, 2017

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/10/17 9:43

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	11/10/17 12:21		CK70903
Aroclor 1221	ND (0.09)		8082A		1	11/10/17 12:21		CK70903
Aroclor 1232	ND (0.09)		8082A		1	11/10/17 12:21		CK70903
Aroclor 1242	**0.35** (0.09)		8082A		1	11/10/17 12:21		CK70903
Aroclor 1248	ND (0.09)		8082A		1	11/10/17 12:21		CK70903
Aroclor 1254	**2.80** (0.47)		8082A		5	11/10/17 14:46		CK70903
Aroclor 1260 [2C]	**LC, P 0.14** (0.09)		8082A		1	11/10/17 12:21		CK70903
Aroclor 1262	ND (0.09)		8082A		1	11/10/17 12:21		CK70903
Aroclor 1268	ND (0.09)		8082A		1	11/10/17 12:21		CK70903

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*58 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*46 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*53 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 11/10/17 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	**382** (56.1)		8270D		10	11/14/17 23:27	C7K0194	CK70932

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*89 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*86 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*
Surrogate: 2-Fluorophenol	*63 %*		*15-110*
Surrogate: Nitrobenzene-d5	*85 %*		*30-130*
Surrogate: Phenol-d6	*70 %*		*15-110*
Surrogate: p-Terphenyl-d14	*47 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-2
Date Sampled: 11/09/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (5.0)		7010		1	KJK	11/15/17 4:52	10	10	CK71024
Lead	ND (5.0)		6020A		5	NAR	11/16/17 14:41	10	10	CK71024
Mercury	ND (0.20)		7470A		1	MJV	11/14/17 12:42	20	40	CK70960
Vanadium	ND (20.0)		6010C		1	KJK	11/10/17 15:41	10	10	CK71024

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-3
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/10/17 11:50

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	11/14/17 21:19	C7K0201	CK71003
C19-C36 Aliphatics1	**400** (93)		MADEP-EPH		1	ZLC	11/14/17 21:19	C7K0201	CK71003
C11-C22 Unadjusted Aromatics1	ND (93.5)		EPH8270		1	VSC	11/15/17 10:24	C7K0240	CK71003
C11-C22 Aromatics1,2	ND (93.5)		EPH8270			VSC	11/15/17 10:24		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CK71003

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*99 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*108 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*113 %*		*40-140*
Surrogate: O-Terphenyl	*77 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-4
Date Sampled: 11/09/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-04
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.61** (N/A)		9040		1	BCA	11/09/17 22:19	S.U.	CK70950
pH Sample Temp	**Aqueous pH measured in water at 10.8 ºC.** (N/A)								
Total Suspended Solids	**165** (5)		2540D		1	JLK	11/13/17 21:51	mg/L	CK71340

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/10/17 9:43

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	11/10/17 12:38		CK70903
Aroclor 1221	ND (0.09)		8082A		1	11/10/17 12:38		CK70903
Aroclor 1232	ND (0.09)		8082A		1	11/10/17 12:38		CK70903
Aroclor 1242	ND (0.09)		8082A		1	11/10/17 12:38		CK70903
Aroclor 1248	ND (0.09)		8082A		1	11/10/17 12:38		CK70903
Aroclor 1254	ND (0.09)		8082A		1	11/10/17 12:38		CK70903
Aroclor 1260	ND (0.09)		8082A		1	11/10/17 12:38		CK70903
Aroclor 1262	ND (0.09)		8082A		1	11/10/17 12:38		CK70903
Aroclor 1268	ND (0.09)		8082A		1	11/10/17 12:38		CK70903

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*91 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*93 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 11/10/17 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	**7.1** (6.0)		8270D		1	11/13/17 22:10	C7K0194	CK70932

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*82 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*85 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*84 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*94 %*		*30-130*
Surrogate: 2-Fluorophenol	*75 %*		*15-110*
Surrogate: Nitrobenzene-d5	*86 %*		*30-130*
Surrogate: Phenol-d6	*87 %*		*15-110*
Surrogate: p-Terphenyl-d14	*100 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-2
Date Sampled: 11/09/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (5.0)		7010		1	KJK	11/11/17 16:33	10	10	CK71024
Lead	ND (5.0)		6020A		5	NAR	11/16/17 14:47	10	10	CK71024
Mercury	ND (0.20)		7470A		1	MJV	11/14/17 12:54	20	40	CK70960
Vanadium	ND (20.0)		6010C		1	KJK	11/10/17 15:46	10	10	CK71024

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-3
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/10/17 11:50

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	11/10/17 23:47	C7K0175	CK71003
C19-C36 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	11/10/17 23:47	C7K0175	CK71003
C11-C22 Unadjusted Aromatics1	ND (93.5)		EPH8270		1	VSC	11/15/17 10:58	C7K0240	CK71003
C11-C22 Aromatics1,2	ND (93.5)		EPH8270			VSC	11/15/17 10:58		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CK71003

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*67 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*106 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*111 %*		*40-140*
Surrogate: O-Terphenyl	*78 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-4
Date Sampled: 11/09/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-08
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**8.07** (N/A)		9040		1	BCA	11/09/17 22:19	S.U.	CK70950
pH Sample Temp	**Aqueous pH measured in water at 10.2 ºC.** (N/A)								
Total Suspended Solids	**13** (5)		2540D		1	JLK	11/13/17 21:51	mg/L	CK71340

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CK70960 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	6.02	0.20	ug/L	6.000		100	80-120			
LCS Dup										
Mercury	5.27	0.20	ug/L	6.000		88	80-120	13	20	
Batch CK71024 - 200.7/6010BNoDigest										
Blank										
Arsenic	ND	5.0	ug/L							
Lead	ND	1.0	ug/L							
Blank										
Arsenic	ND	5.0	ug/L							
Lead	ND	1.0	ug/L							
Vanadium	ND	20.0	ug/L							
LCS										
Vanadium	0.5		mg/L	0.5000		102	80-120			
LCS										
Lead	21.3		ug/L	20.00		107	80-120			
LCS										
Arsenic	24.8		ug/L	25.00		99	80-120			
8082A Polychlorinated Biphenyls (PCB)										
Batch CK70903 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1016 [2C]	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1221 [2C]	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1232 [2C]	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1242 [2C]	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Aroclor 1268 [2C]	ND	0.10	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711289

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK70903 - 3510C										
Surrogate: Decachlorobiphenyl	*0.0337*		ug/L	*0.05000*		*67*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0372*		ug/L	*0.05000*		*74*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0260*		ug/L	*0.05000*		*52*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0294*		ug/L	*0.05000*		*59*	*30-150*			
LCS										
Aroclor 1016	0.83	0.10	ug/L	1.000		83	40-140			
Aroclor 1016 [2C]	0.84	0.10	ug/L	1.000		84	40-140			
Aroclor 1260	0.86	0.10	ug/L	1.000		86	40-140			
Aroclor 1260 [2C]	0.84	0.10	ug/L	1.000		84	40-140			
Surrogate: Decachlorobiphenyl	*0.0449*		ug/L	*0.05000*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0468*		ug/L	*0.05000*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0366*		ug/L	*0.05000*		*73*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0352*		ug/L	*0.05000*		*70*	*30-150*			
LCS Dup										
Aroclor 1016	0.87	0.10	ug/L	1.000		87	40-140	4	20	
Aroclor 1016 [2C]	0.88	0.10	ug/L	1.000		88	40-140	5	20	
Aroclor 1260	0.91	0.10	ug/L	1.000		91	40-140	5	20	
Aroclor 1260 [2C]	0.89	0.10	ug/L	1.000		89	40-140	6	20	
Surrogate: Decachlorobiphenyl	*0.0457*		ug/L	*0.05000*		*91*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0491*		ug/L	*0.05000*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0387*		ug/L	*0.05000*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0376*		ug/L	*0.05000*		*75*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CK70932 - 3520C										
Blank										
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*74.8*		ug/L	*100.0*		*75*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*108*		ug/L	*150.0*		*72*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*111*		ug/L	*150.0*		*74*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*80.6*		ug/L	*100.0*		*81*	*30-130*			
Surrogate: 2-Fluorophenol	*117*		ug/L	*150.0*		*78*	*15-110*			
Surrogate: Nitrobenzene-d5	*74.4*		ug/L	*100.0*		*74*	*30-130*			
Surrogate: Phenol-d6	*115*		ug/L	*150.0*		*76*	*15-110*			
Surrogate: p-Terphenyl-d14	*114*		ug/L	*100.0*		*114*	*30-130*			
LCS										
bis(2-Ethylhexyl)phthalate	80.6	6.0	ug/L	100.0		81	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*74.8*		ug/L	*100.0*		*75*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*129*		ug/L	*150.0*		*86*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*95.4*		ug/L	*150.0*		*64*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*85.9*		ug/L	*100.0*		*86*	*30-130*			
Surrogate: 2-Fluorophenol	*77.9*		ug/L	*150.0*		*52*	*15-110*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK70932 - 3520C										
Surrogate: Nitrobenzene-d5	*91.2*		ug/L	*100.0*		*91*	*30-130*			
Surrogate: Phenol-d6	*96.7*		ug/L	*150.0*		*64*	*15-110*			
Surrogate: p-Terphenyl-d14	*86.6*		ug/L	*100.0*		*87*	*30-130*			
LCS Dup										
bis(2-Ethylhexyl)phthalate	85.8	6.0	ug/L	100.0		86	40-140	6	20	
Surrogate: 1,2-Dichlorobenzene-d4	*81.7*		ug/L	*100.0*		*82*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*142*		ug/L	*150.0*		*94*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*114*		ug/L	*150.0*		*76*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*95.2*		ug/L	*100.0*		*95*	*30-130*			
Surrogate: 2-Fluorophenol	*92.4*		ug/L	*150.0*		*62*	*15-110*			
Surrogate: Nitrobenzene-d5	*97.8*		ug/L	*100.0*		*98*	*30-130*			
Surrogate: Phenol-d6	*114*		ug/L	*150.0*		*76*	*15-110*			
Surrogate: p-Terphenyl-d14	*97.5*		ug/L	*100.0*		*97*	*30-130*			
Classical Chemistry										
Batch CK71340 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	32		mg/L	34.10		94	80-120			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK71003 - 3510C										
Blank										
C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	100	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							
Surrogate: 1-Chlorooctadecane	*35.8*		ug/L	*50.00*		*72*	*40-140*			
Blank										

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK71003 - 3510C										
2-Methylnaphthalene	ND	5.0	ug/L							
Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	*45.3*		ug/L	*50.00*		*91*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*41.2*		ug/L	*50.00*		*82*	*40-140*			
Surrogate: O-Terphenyl	*36.9*		ug/L	*50.00*		*74*	*40-140*			
LCS										
C19-C36 Aliphatics1	321	100	ug/L	400.0		80	40-140			
C9-C18 Aliphatics1	198	100	ug/L	300.0		66	40-140			
Decane (C10)	28	5	ug/L	50.00		56	40-140			
Docosane (C22)	36	5	ug/L	50.00		73	40-140			
Dodecane (C12)	27	5	ug/L	50.00		54	40-140			
Eicosane (C20)	36	5	ug/L	50.00		73	40-140			
Hexacosane (C26)	37	5	ug/L	50.00		74	40-140			
Hexadecane (C16)	36	5	ug/L	50.00		71	40-140			
Hexatriacontane (C36)	39	5	ug/L	50.00		78	40-140			
Nonadecane (C19)	37	5	ug/L	50.00		74	40-140			
Nonane (C9)	23	5	ug/L	50.00		46	30-140			
Octacosane (C28)	37	5	ug/L	50.00		74	40-140			
Octadecane (C18)	35	5	ug/L	50.00		70	40-140			
Tetracosane (C24)	37	5	ug/L	50.00		74	40-140			
Tetradecane (C14)	34	5	ug/L	50.00		67	40-140			
Triacontane (C30)	37	5	ug/L	50.00		74	40-140			
Surrogate: 1-Chlorooctadecane	*34.1*		ug/L	*50.00*		*68*	*40-140*			
LCS										
2-Methylnaphthalene	35.2	5.0	ug/L	50.00		70	40-140			
Acenaphthene	36.0	5.0	ug/L	50.00		72	40-140			
Acenaphthylene	37.3	5.0	ug/L	50.00		75	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK71003 - 3510C										
Anthracene	37.0	5.0	ug/L	50.00		74	40-140			
Benzo(a)anthracene	36.4	5.0	ug/L	50.00		73	40-140			
Benzo(a)pyrene	34.3	10.0	ug/L	50.00		69	40-140			
Benzo(b)fluoranthene	35.8	5.0	ug/L	50.00		72	40-140			
Benzo(g,h,i)perylene	34.2	10.0	ug/L	50.00		68	40-140			
Benzo(k)fluoranthene	35.7	10.0	ug/L	50.00		71	40-140			
C11-C22 Aromatics1,2	158	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	769	100	ug/L	850.0		90	40-140			
Chrysene	35.6	10.0	ug/L	50.00		71	40-140			
Dibenzo(a,h)Anthracene	33.4	5.0	ug/L	50.00		67	40-140			
Fluoranthene	35.5	10.0	ug/L	50.00		71	40-140			
Fluorene	37.5	5.0	ug/L	50.00		75	40-140			
Indeno(1,2,3-cd)Pyrene	36.8	5.0	ug/L	50.00		74	40-140			
Naphthalene	36.8	10.0	ug/L	50.00		74	40-140			
Phenanthrene	36.9	5.0	ug/L	50.00		74	40-140			
Pyrene	36.6	5.0	ug/L	50.00		73	40-140			
Surrogate: 2-Bromonaphthalene	*45.0*		ug/L	*50.00*		*90*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*46.1*		ug/L	*50.00*		*92*	*40-140*			
Surrogate: O-Terphenyl	*38.6*		ug/L	*50.00*		*77*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	301	100	ug/L	400.0		75	40-140	7	25	
C9-C18 Aliphatics1	183	100	ug/L	300.0		61	40-140	8	25	
Decane (C10)	24	5	ug/L	50.00		48	40-140	15	25	
Docosane (C22)	35	5	ug/L	50.00		69	40-140	5	25	
Dodecane (C12)	24	5	ug/L	50.00		48	40-140	13	25	
Eicosane (C20)	35	5	ug/L	50.00		69	40-140	5	25	
Hexacosane (C26)	35	5	ug/L	50.00		70	40-140	5	25	
Hexadecane (C16)	34	5	ug/L	50.00		68	40-140	5	25	
Hexatriacontane (C36)	37	5	ug/L	50.00		73	40-140	5	25	
Nonadecane (C19)	35	5	ug/L	50.00		70	40-140	5	25	
Nonane (C9)	20	5	ug/L	50.00		39	30-140	15	25	
Octacosane (C28)	35	5	ug/L	50.00		70	40-140	5	25	
Octadecane (C18)	33	5	ug/L	50.00		67	40-140	5	25	
Tetracosane (C24)	35	5	ug/L	50.00		70	40-140	5	25	
Tetradecane (C14)	32	5	ug/L	50.00		63	40-140	6	25	
Triacontane (C30)	35	5	ug/L	50.00		71	40-140	5	25	
Surrogate: 1-Chlorooctadecane	*33.1*		ug/L	*50.00*		*66*	*40-140*			
LCS Dup										
2-Methylnaphthalene	28.5	5.0	ug/L	50.00		57	40-140	21	20	D+
Acenaphthene	32.6	5.0	ug/L	50.00		65	40-140	10	20	
Acenaphthylene	33.3	5.0	ug/L	50.00		67	40-140	11	20	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK71003 - 3510C										
Anthracene	33.3	5.0	ug/L	50.00		67	40-140	11	20	
Benzo(a)anthracene	32.3	5.0	ug/L	50.00		65	40-140	12	20	
Benzo(a)pyrene	30.7	10.0	ug/L	50.00		61	40-140	11	20	
Benzo(b)fluoranthene	31.4	5.0	ug/L	50.00		63	40-140	13	20	
Benzo(g,h,i)perylene	28.9	10.0	ug/L	50.00		58	40-140	17	20	
Benzo(k)fluoranthene	32.0	10.0	ug/L	50.00		64	40-140	11	20	
C11-C22 Aromatics1,2	130	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	665	100	ug/L	850.0		78	40-140	15	25	
Chrysene	32.2	10.0	ug/L	50.00		64	40-140	10	20	
Dibenzo(a,h)Anthracene	29.7	5.0	ug/L	50.00		59	40-140	12	20	
Fluoranthene	30.9	10.0	ug/L	50.00		62	40-140	14	20	
Fluorene	33.1	5.0	ug/L	50.00		66	40-140	13	20	
Indeno(1,2,3-cd)Pyrene	31.2	5.0	ug/L	50.00		62	40-140	17	20	
Naphthalene	31.1	10.0	ug/L	50.00		62	40-140	17	20	
Phenanthrene	32.4	5.0	ug/L	50.00		65	40-140	13	20	
Pyrene	31.5	5.0	ug/L	50.00		63	40-140	15	20	
Surrogate: 2-Bromonaphthalene	*45.3*		ug/L	*50.00*		*91*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*44.8*		ug/L	*50.00*		*90*	*40-140*			
Surrogate: O-Terphenyl	*33.4*		ug/L	*50.00*		*67*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711289

Notes and Definitions

Z16a	Aqueous pH measured in water at 10.8 ºC.
Z16	Aqueous pH measured in water at 10.2 ºC.
Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
P	Percent difference between primary and confirmation results exceeds 40% (P).
LC	Lower value is used due to matrix interferences (LC).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711289
Date Received: 11/9/2017
Project Due Date: 11/16/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	181232	Yes	NA	Yes	1L Amber - Unpres	NP	
01	181233	Yes	NA	Yes	1L Amber - Unpres	NP	
02	181235	Yes	NA	Yes	250 mL Poly - Unpres	NP	
03	181237	Yes	NA	Yes	1L Amber - HCl	HCl	
04	181240	Yes	NA	Yes	1L Poly - Unpres	NP	
04	181241	Yes	NA	Yes	1L Poly - Unpres	NP	
05	181230	Yes	NA	Yes	1L Amber - Unpres	NP	
05	181231	Yes	NA	Yes	1L Amber - Unpres	NP	
06	181234	Yes	NA	Yes	250 mL Poly - Unpres	NP	
07	181236	Yes	NA	Yes	1L Amber - HCl	HCl	
08	181238	Yes	NA	Yes	1L Poly - Unpres	NP	
08	181239	Yes	NA	Yes	1L Poly - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 11/9/17 2202
Reviewed By: Date & Time: 11/9/17 2211
Delivered By: 11/9/17 2211

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1711289

Turn Time (5-Day) **Rush**

Regulatory State

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Reporting Limits NRWQC(SW)

Electonic Deliverables ☐ Limit Checker ☑ Standard Excel ☐ Other (Please Specify →)

Company Name	Project #	Project Name
SPS New England/ Charter Contracting Co, LLC	454	Wynn Dredging

Contact Person	Address
Katherine Mason	98 Elm St

City	State	Zip Code	PO #
Salisbury	MA	01952	

Telephone Number	FAX Number	Email Address
617-608-7317		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Dissolved Metals (Arsenic, Lead, Mercury, Vanadium)	TSS	pH	EPH	PCBs	sVOCs (2-ethylhexyl phthalate)
01	11/9/17		Grab	Aqueous	171101-Wynn-CC-Influent-1					2	2
02	11/9/17		Grab	Aqueous	171101-Wynn-CC-Influent-2	1					
03	11/9/17		Grab	Aqueous	171101-Wynn-CC-Influent-3				2		
04	11/9/17		Grab	Aqueous	171101-Wynn-CC-Influent-4		1	1			
05	11/9/17		Grab	Aqueous	171101-Wynn-CC-Effluent-1					2	2
06	11/9/17		Grab	Aqueous	171101-Wynn-CC-Effluent-2	1					
07	11/9/17		Grab	Aqueous	171101-Wynn-CC-Effluent-3				2		
08	11/9/17		Grab	Aqueous	171101-Wynn-CC-Effluent-4		1	1			
Container Type:	AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial					P	P	P	AG	AG	AG
Container Volume:	1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*					3	6	6	6	6	6
Preservation Code:	1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*					1	1	1	2	1	1
					Number of Containers per Sample:						

Laboratory Use Only

Cooler Present: Yes
Seals Intact: NA
Cooler Temperature: °C ice temp: 1.3

Sampled by : Meghan Clifford

Comments: **Please specify "Other" preservative and containers types in this space**

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 11/9/17 14:10	[signature] 11/9/17 14:10	[signature] 11/9/17 20:08	[signature] 11/9/17 2147
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Dredging (454)
ESS Laboratory Work Order Number: 1711467

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:17 pm, Nov 17, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

SAMPLE RECEIPT

The following samples were received on November 15, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals, SVOA and EPH were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
1711467-01	171101-Wynn-CC-Influent-1	Aqueous	8082A
1711467-02	171101-Wynn-CC-Influent-2	Aqueous	6010C, 6020A, 7470A
1711467-03	171101-Wynn-CC-Influent-3	Aqueous	EPH8270, MADEP-EPH
1711467-04	171101-Wynn-CC-Influent-4	Aqueous	2540D, 9040
1711467-05	171101-Wynn-CC-Effluent-1	Aqueous	8082A
1711467-06	171101-Wynn-CC-Effluent-2	Aqueous	6010C, 6020A, 7470A
1711467-07	171101-Wynn-CC-Effluent-3	Aqueous	EPH8270, MADEP-EPH
1711467-08	171101-Wynn-CC-Effluent-4	Aqueous	2540D, 9040

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 11/15/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/16/17 9:27

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	11/16/17 10:38		CK71506
Aroclor 1221	ND (0.09)		8082A		1	11/16/17 10:38		CK71506
Aroclor 1232	ND (0.09)		8082A		1	11/16/17 10:38		CK71506
Aroclor 1242	ND (0.09)		8082A		1	11/16/17 10:38		CK71506
Aroclor 1248	ND (0.09)		8082A		1	11/16/17 10:38		CK71506
Aroclor 1254	ND (0.09)		8082A		1	11/16/17 10:38		CK71506
Aroclor 1260	ND (0.09)		8082A		1	11/16/17 10:38		CK71506
Aroclor 1262	ND (0.09)		8082A		1	11/16/17 10:38		CK71506
Aroclor 1268	ND (0.09)		8082A		1	11/16/17 10:38		CK71506

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*76 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*60 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*70 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-2
Date Sampled: 11/15/17 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Lead	ND (5.0)		6020A		5	NAR	11/16/17 16:32	10	10	CK71625
Mercury	ND (0.20)		7470A		1	MJV	11/16/17 15:21	20	40	CK71538
Vanadium	ND (20.0)		6010C		1	KJK	11/16/17 14:12	10	10	CK71625

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-3
Date Sampled: 11/15/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/16/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	11/17/17 12:36	C7K0300	CK71604
C19-C36 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	11/17/17 12:36	C7K0300	CK71604
C11-C22 Unadjusted Aromatics1	ND (93.5)		EPH8270		1	ZLC	11/17/17 13:43	C7K0298	CK71604
C11-C22 Aromatics1,2	ND (93.5)		EPH8270			ZLC	11/17/17 13:43		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			IBM			CK71604

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*53 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*109 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*112 %*		*40-140*
Surrogate: O-Terphenyl	*74 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-4
Date Sampled: 11/15/17 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-04
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.14** (N/A)		9040		1	BCA	11/15/17 21:40	S.U.	CK71549
pH Sample Temp	**Aqueous pH measured in water at 15.4 ºC.** (N/A)								
Total Suspended Solids	**36** (5)		2540D		1	EEM	11/16/17 17:15	mg/L	CK71609

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 11/15/17 10:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/16/17 9:27

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	11/16/17 10:56		CK71506
Aroclor 1221	ND (0.09)		8082A		1	11/16/17 10:56		CK71506
Aroclor 1232	ND (0.09)		8082A		1	11/16/17 10:56		CK71506
Aroclor 1242	ND (0.09)		8082A		1	11/16/17 10:56		CK71506
Aroclor 1248	ND (0.09)		8082A		1	11/16/17 10:56		CK71506
Aroclor 1254	ND (0.09)		8082A		1	11/16/17 10:56		CK71506
Aroclor 1260	ND (0.09)		8082A		1	11/16/17 10:56		CK71506
Aroclor 1262	ND (0.09)		8082A		1	11/16/17 10:56		CK71506
Aroclor 1268	ND (0.09)		8082A		1	11/16/17 10:56		CK71506

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*98 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-2
Date Sampled: 11/15/17 10:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Lead	ND (5.0)		6020A		5	NAR	11/16/17 16:38	10	10	CK71625
Mercury	ND (0.20)		7470A		1	MJV	11/16/17 15:28	20	40	CK71538
Vanadium	ND (20.0)		6010C		1	KJK	11/16/17 14:17	10	10	CK71625

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-3
Date Sampled: 11/15/17 10:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/16/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	11/17/17 13:23	C7K0300	CK71604
C19-C36 Aliphatics1	ND (93)		MADEP-EPH		1	ZLC	11/17/17 13:23	C7K0300	CK71604
C11-C22 Unadjusted Aromatics1	ND (93.5)		EPH8270		1	ZLC	11/17/17 14:17	C7K0298	CK71604
C11-C22 Aromatics1,2	ND (93.5)		EPH8270			ZLC	11/17/17 14:17		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			IBM			CK71604

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*63 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*111 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*108 %*		*40-140*
Surrogate: O-Terphenyl	*80 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-4
Date Sampled: 11/15/17 10:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-08
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.91** (N/A)		9040		1	BCA	11/15/17 21:40	S.U.	CK71549
pH Sample Temp	**Aqueous pH measured in water at 14.9 ºC.** (N/A)								
Total Suspended Solids	**43** (5)		2540D		1	EEM	11/16/17 17:15	mg/L	CK71609

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CK71538 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.89	0.20	ug/L	6.000		98	80-120			
LCS Dup										
Mercury	6.03	0.20	ug/L	6.000		100	80-120	2	20	
Batch CK71625 - 200.7/6010BNoDigest										
Blank										
Lead	ND	1.0	ug/L							
Blank										
Lead	ND	1.0	ug/L							
Vanadium	ND	20.0	ug/L							
LCS										
Vanadium	0.5		mg/L	0.5000		98	80-120			
LCS										
Lead	19.5		ug/L	20.28		96	80-120			
8082A Polychlorinated Biphenyls (PCB)										
Batch CK71506 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1016 [2C]	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1221 [2C]	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1232 [2C]	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1242 [2C]	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Aroclor 1268 [2C]	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0446*		ug/L	*0.05000*		*89*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0480*		ug/L	*0.05000*		*96*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0283*		ug/L	*0.05000*		*57*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0323*		ug/L	*0.05000*		*65*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK71506 - 3510C										
LCS										
Aroclor 1016	0.85	0.10	ug/L	1.000		85	40-140			
Aroclor 1016 [2C]	0.86	0.10	ug/L	1.000		86	40-140			
Aroclor 1260	0.90	0.10	ug/L	1.000		90	40-140			
Aroclor 1260 [2C]	0.85	0.10	ug/L	1.000		85	40-140			
Surrogate: Decachlorobiphenyl	*0.0469*		ug/L	*0.05000*		*94*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0499*		ug/L	*0.05000*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0360*		ug/L	*0.05000*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0357*		ug/L	*0.05000*		*71*	*30-150*			
LCS Dup										
Aroclor 1016	0.86	0.10	ug/L	1.000		86	40-140	0.4	20	
Aroclor 1016 [2C]	0.86	0.10	ug/L	1.000		86	40-140	0.1	20	
Aroclor 1260	0.90	0.10	ug/L	1.000		90	40-140	0.1	20	
Aroclor 1260 [2C]	0.85	0.10	ug/L	1.000		85	40-140	0.8	20	
Surrogate: Decachlorobiphenyl	*0.0437*		ug/L	*0.05000*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0462*		ug/L	*0.05000*		*92*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0332*		ug/L	*0.05000*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0335*		ug/L	*0.05000*		*67*	*30-150*			
Classical Chemistry										
Batch CK71609 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	32		mg/L	34.10		94	80-120			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK71604 - 3510C										
Blank										
C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	100	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK71604 - 3510C										
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							
Surrogate: 1-Chlorooctadecane	*34.6*		ug/L	*50.00*		*69*	*40-140*			
Blank										
2-Methylnaphthalene	ND	5.0	ug/L							
Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	*60.6*		mg/L	*50.00*		*121*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*61.8*		mg/L	*50.00*		*124*	*40-140*			
Surrogate: O-Terphenyl	*42.8*		ug/L	*50.00*		*86*	*40-140*			
LCS										
C19-C36 Aliphatics1	398	100	ug/L	400.0		99	40-140			
C9-C18 Aliphatics1	234	100	ug/L	300.0		78	40-140			
Decane (C10)	33	5	ug/L	50.00		65	40-140			
Docosane (C22)	45	5	ug/L	50.00		90	40-140			
Dodecane (C12)	32	5	ug/L	50.00		64	40-140			
Eicosane (C20)	45	5	ug/L	50.00		90	40-140			
Hexacosane (C26)	46	5	ug/L	50.00		92	40-140			
Hexadecane (C16)	43	5	ug/L	50.00		86	40-140			
Hexatriacontane (C36)	47	5	ug/L	50.00		94	40-140			
Nonadecane (C19)	45	5	ug/L	50.00		90	40-140			
Nonane (C9)	26	5	ug/L	50.00		52	30-140			
Octacosane (C28)	46	5	ug/L	50.00		92	40-140			
Octadecane (C18)	42	5	ug/L	50.00		85	40-140			
Tetracosane (C24)	46	5	ug/L	50.00		91	40-140			
Tetradecane (C14)	40	5	ug/L	50.00		80	40-140			
Triacontane (C30)	46	5	ug/L	50.00		93	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK71604 - 3510C										
Surrogate: 1-Chlorooctadecane	*40.0*		ug/L	*50.00*		*80*	*40-140*			
LCS										
2-Methylnaphthalene	34.1	5.0	ug/L	50.00		68	40-140			
Acenaphthene	37.1	5.0	ug/L	50.00		74	40-140			
Acenaphthylene	36.7	5.0	ug/L	50.00		73	40-140			
Anthracene	38.4	5.0	ug/L	50.00		77	40-140			
Benzo(a)anthracene	37.2	5.0	ug/L	50.00		74	40-140			
Benzo(a)pyrene	33.0	10.0	ug/L	50.00		66	40-140			
Benzo(b)fluoranthene	37.9	5.0	ug/L	50.00		76	40-140			
Benzo(g,h,i)perylene	33.5	10.0	ug/L	50.00		67	40-140			
Benzo(k)fluoranthene	37.4	10.0	ug/L	50.00		75	40-140			
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	630	100	ug/L	850.0		74	40-140			
Chrysene	35.8	10.0	ug/L	50.00		72	40-140			
Dibenzo(a,h)Anthracene	32.5	5.0	ug/L	50.00		65	40-140			
Fluoranthene	38.3	10.0	ug/L	50.00		77	40-140			
Fluorene	38.0	5.0	ug/L	50.00		76	40-140			
Indeno(1,2,3-cd)Pyrene	38.9	5.0	ug/L	50.00		78	40-140			
Naphthalene	35.8	10.0	ug/L	50.00		72	40-140			
Phenanthrene	37.6	5.0	ug/L	50.00		75	40-140			
Pyrene	38.1	5.0	ug/L	50.00		76	40-140			
Surrogate: 2-Bromonaphthalene	*54.5*		mg/L	*50.00*		*109*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*57.5*		mg/L	*50.00*		*115*	*40-140*			
Surrogate: O-Terphenyl	*42.3*		ug/L	*50.00*		*85*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	400	100	ug/L	400.0		100	40-140	0.7	25	
C9-C18 Aliphatics1	239	100	ug/L	300.0		80	40-140	2	25	
Decane (C10)	33	5	ug/L	50.00		66	40-140	2	25	
Docosane (C22)	45	5	ug/L	50.00		91	40-140	0.4	25	
Dodecane (C12)	33	5	ug/L	50.00		65	40-140	2	25	
Eicosane (C20)	45	5	ug/L	50.00		91	40-140	0.7	25	
Hexacosane (C26)	46	5	ug/L	50.00		92	40-140	0.3	25	
Hexadecane (C16)	44	5	ug/L	50.00		87	40-140	2	25	
Hexatriacontane (C36)	47	5	ug/L	50.00		94	40-140	0.3	25	
Nonadecane (C19)	45	5	ug/L	50.00		91	40-140	1	25	
Nonane (C9)	26	5	ug/L	50.00		53	30-140	1	25	
Octacosane (C28)	46	5	ug/L	50.00		93	40-140	0.3	25	
Octadecane (C18)	43	5	ug/L	50.00		86	40-140	1	25	
Tetracosane (C24)	46	5	ug/L	50.00		92	40-140	0.3	25	
Tetradecane (C14)	41	5	ug/L	50.00		82	40-140	3	25	
Triacontane (C30)	47	5	ug/L	50.00		93	40-140	0.3	25	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CK71604 - 3510C										
Surrogate: 1-Chlorooctadecane	*44.1*		ug/L	*50.00*		*88*	*40-140*			
LCS Dup										
2-Methylnaphthalene	34.8	5.0	ug/L	50.00		70	40-140	2	20	
Acenaphthene	37.4	5.0	ug/L	50.00		75	40-140	0.9	20	
Acenaphthylene	35.6	5.0	ug/L	50.00		71	40-140	3	20	
Anthracene	38.4	5.0	ug/L	50.00		77	40-140	0.1	20	
Benzo(a)anthracene	36.6	5.0	ug/L	50.00		73	40-140	2	20	
Benzo(a)pyrene	32.6	10.0	ug/L	50.00		65	40-140	1	20	
Benzo(b)fluoranthene	37.2	5.0	ug/L	50.00		74	40-140	2	20	
Benzo(g,h,i)perylene	32.9	10.0	ug/L	50.00		66	40-140	2	20	
Benzo(k)fluoranthene	36.5	10.0	ug/L	50.00		73	40-140	2	20	
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	633	100	ug/L	850.0		74	40-140	0.3	25	
Chrysene	36.0	10.0	ug/L	50.00		72	40-140	0.7	20	
Dibenzo(a,h)Anthracene	32.2	5.0	ug/L	50.00		64	40-140	0.9	20	
Fluoranthene	38.5	10.0	ug/L	50.00		77	40-140	0.6	20	
Fluorene	37.4	5.0	ug/L	50.00		75	40-140	2	20	
Indeno(1,2,3-cd)Pyrene	38.0	5.0	ug/L	50.00		76	40-140	2	20	
Naphthalene	35.6	10.0	ug/L	50.00		71	40-140	0.6	20	
Phenanthrene	37.6	5.0	ug/L	50.00		75	40-140	0.2	20	
Pyrene	38.1	5.0	ug/L	50.00		76	40-140	0.05	20	
Surrogate: 2-Bromonaphthalene	*55.0*		mg/L	*50.00*		*110*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*55.0*		mg/L	*50.00*		*110*	*40-140*			
Surrogate: O-Terphenyl	*40.8*		ug/L	*50.00*		*82*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711467

Notes and Definitions

Z16a	Aqueous pH measured in water at 15.4 ºC.
Z16	Aqueous pH measured in water at 14.9 ºC.
Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711467
Date Received: 11/15/2017
Project Due Date: 11/22/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.4 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	182365	Yes	NA	Yes	1L Amber - Unpres	NP	
01	182366	Yes	NA	Yes	1L Amber - Unpres	NP	
01	182367	Yes	NA	Yes	1L Amber - Unpres	NP	
01	182368	Yes	NA	Yes	1L Amber - Unpres	NP	
02	182379	Yes	NA	Yes	250 mL Poly - Unpres	NP	
03	182369	Yes	NA	Yes	1L Amber - HCl	HCl	
03	182370	Yes	NA	Yes	1L Amber - HCl	HCl	
04	182371	Yes	NA	Yes	1L Poly - Unpres	NP	
05	182372	Yes	NA	Yes	1L Amber - Unpres	NP	
05	182373	Yes	NA	Yes	1L Amber - Unpres	NP	
05	182374	Yes	NA	Yes	1L Amber - Unpres	NP	
05	182375	Yes	NA	Yes	1L Amber - Unpres	NP	
06	182380	Yes	NA	Yes	250 mL Poly - Unpres	NP	
07	182376	Yes	NA	Yes	1L Amber - HCl	HCl	
07	182377	Yes	NA	Yes	1L Amber - HCl	HCl	
08	182378	Yes	NA	Yes	1L Poly - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 11/15/17 1939
Reviewed

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711467

Date Received: 11/15/2017

By:

Date & Time: 11/15/17 2040

Delivered By:

11/15/17 2040

ESS Laboratory

Division of Thielsch Engineering, Inc.
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Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time	5-Day **Rush**
Regulatory State	
Is this project for any of the following?:	○CT RCP ○MA MCP ○RGP

ESS Lab #	1711467
Reporting Limits	NRWQC(SW)
Electonic Deliverables	☐Limit Checker ☑Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
SPS New England/ Charter Contracting Co, LLC	454	Wynn Dredging

Contact Person	Address
Katherine Mason	98 Elm St

City	State	Zip Code	PO #
Salisbury	MA	01952	

Telephone Number	FAX Number	Email Address
617-608-7317		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Dissolved Metals (Arsenic, Lead, Mercury, Vanadium)	TSS/pH	EPH	PCBs	sVOCs (2-ethylhexyl phthalate)
01	11/15/17	1100	Grab	Aqueous	171101-Wynn-CC-Influent-1				2	2
02	11/15/17	1100	Grab	Aqueous	171101-Wynn-CC-Influent-2	1				
03	11/15/17	1100	Grab	Aqueous	171101-Wynn-CC-Influent-3			2		
04	11/15/17	1100	Grab	Aqueous	171101-Wynn-CC-Influent-4		1			
05	11/15/17	1045	Grab	Aqueous	171101-Wynn-CC-Effluent-1				2	2
06	11/15/17	1045	Grab	Aqueous	171101-Wynn-CC-Effluent-2	1				
07	11/15/17	1045	Grab	Aqueous	171101-Wynn-CC-Effluent-3			2		
08	11/15/17	1045	Grab	Aqueous	171101-Wynn-CC-Effluent-4		1			
Container Type:	AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial					P	P	AG	AG	AG
Container Volume:	1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*					3	6	6	6	6
Preservation Code:	1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*					1	1	2	1	1
					Number of Containers per Sample:	2	2	4	4	4

Laboratory Use Only

Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 2.4

Sampled by : Meghan Clifford

Comments: **Please specify "Other" preservative and containers types in this space**

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 11/15/17	[signature] 11/15/17 14:10	[signature] 11/15/17 17:12	[signature] 11/15/17 1530
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Dredging (454)
ESS Laboratory Work Order Number: 1712309

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:02 pm, Dec 21, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

SAMPLE RECEIPT

The following samples were received on December 13, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals, SVOA, and EPH were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
1712309-01	171101-Wynn-CC-Influent-1	Aqueous	8082A, 8270D
1712309-02	171101-Wynn-CC-Influent-2	Aqueous	6010C, 6020A, 7010, 7470A
1712309-03	171101-Wynn-CC-Influent-3	Aqueous	EPH8270, MADEP-EPH
1712309-04	171101-Wynn-CC-Influent-4	Aqueous	2540D, 9040
1712309-05	171101-Wynn-CC-Effluent-1	Aqueous	8082A, 8270D
1712309-06	171101-Wynn-CC-Effluent-2	Aqueous	6010C, 6020A, 7010, 7470A
1712309-07	171101-Wynn-CC-Efluent-3	Aqueous	EPH8270, MADEP-EPH
1712309-08	171101-Wynn-CC-Effluent-4	Aqueous	2540D, 9040

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

PROJECT NARRATIVE

8270D Semi-Volatile Organic Compounds
C7L0289-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Phenol-d6 (21% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1712309-01 through 1712309-08**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	(X) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	( ) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	(X) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for '"Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: December 21, 2017

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 12/13/17 11:50
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 12/14/17 8:54

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/14/17 11:09		CL71301
Aroclor 1221	ND (0.09)		8082A		1	12/14/17 11:09		CL71301
Aroclor 1232	ND (0.09)		8082A		1	12/14/17 11:09		CL71301
Aroclor 1242	ND (0.09)		8082A		1	12/14/17 11:09		CL71301
Aroclor 1248	ND (0.09)		8082A		1	12/14/17 11:09		CL71301
Aroclor 1254	ND (0.09)		8082A		1	12/14/17 11:09		CL71301
Aroclor 1260	ND (0.09)		8082A		1	12/14/17 11:09		CL71301
Aroclor 1262	ND (0.09)		8082A		1	12/14/17 11:09		CL71301
Aroclor 1268	ND (0.09)		8082A		1	12/14/17 11:09		CL71301

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*62 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*53 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 12/13/17 11:50
Percent Solids: N/A
Initial Volume: 1040
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 12/14/17 15:35

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	ND (5.8)		8270D		1	12/19/17 19:34	C7L0289	CL71309

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*102 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*79 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*
Surrogate: 2-Fluorophenol	*70 %*		*15-110*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*
Surrogate: Phenol-d6	*69 %*		*15-110*
Surrogate: p-Terphenyl-d14	*71 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-2
Date Sampled: 12/13/17 11:50
Percent Solids: N/A

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (5.0)		7010		1	MJV/KJK	12/19/17 18:20	10	10	CL71829
Lead	ND (1.0)		6020A		1	NAR	12/18/17 18:01	10	10	CL71829
Mercury	ND (0.20)		7470A		1	MJV	12/15/17 12:46	20	40	CL71422
Vanadium	ND (20.0)		6010C		1	KJK	12/19/17 4:14	10	10	CL71829

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-3
Date Sampled: 12/13/17 11:50
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 12/14/17 14:13

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (94)		MADEP-EPH		1	ZLC	12/14/17 23:54	C7L0211	CL71401
C19-C36 Aliphatics1	ND (94)		MADEP-EPH		1	ZLC	12/14/17 23:54	C7L0211	CL71401
C11-C22 Unadjusted Aromatics1	ND (94.3)		EPH8270		1	ZLC	12/15/17 0:51	C7L0227	CL71401
C11-C22 Aromatics1,2	ND (94.3)		EPH8270			ZLC	12/15/17 0:51		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CL71401

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*62 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*92 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*85 %*		*40-140*
Surrogate: O-Terphenyl	*82 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-4
Date Sampled: 12/13/17 11:50
Percent Solids: N/A

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-04
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.37** (N/A)		9040		1	BCA	12/13/17 21:22	S.U.	CL71356
pH Sample Temp	**Aqueous pH measured in water at 15.6 ºC.** (N/A)								
Total Suspended Solids	**40** (10)		2540D		1	JLK	12/14/17 20:29	mg/L	CL71347

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 12/13/17 12:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 12/14/17 8:54

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/14/17 11:27		CL71301
Aroclor 1221	ND (0.09)		8082A		1	12/14/17 11:27		CL71301
Aroclor 1232	ND (0.09)		8082A		1	12/14/17 11:27		CL71301
Aroclor 1242	ND (0.09)		8082A		1	12/14/17 11:27		CL71301
Aroclor 1248	ND (0.09)		8082A		1	12/14/17 11:27		CL71301
Aroclor 1254	ND (0.09)		8082A		1	12/14/17 11:27		CL71301
Aroclor 1260	ND (0.09)		8082A		1	12/14/17 11:27		CL71301
Aroclor 1262	ND (0.09)		8082A		1	12/14/17 11:27		CL71301
Aroclor 1268	ND (0.09)		8082A		1	12/14/17 11:27		CL71301

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*61 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 12/13/17 12:00
Percent Solids: N/A
Initial Volume: 1040
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 12/14/17 15:35

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	ND (5.8)		8270D		1	12/19/17 20:08	C7L0289	CL71309

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*96 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*76 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*82 %*		*30-130*
Surrogate: 2-Fluorophenol	*67 %*		*15-110*
Surrogate: Nitrobenzene-d5	*75 %*		*30-130*
Surrogate: Phenol-d6	*65 %*		*15-110*
Surrogate: p-Terphenyl-d14	*91 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-2
Date Sampled: 12/13/17 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (5.0)		7010		1	MJV/KJK	12/19/17 18:26	10	10	CL71829
Lead	ND (1.0)		6020A		1	NAR	12/18/17 18:07	10	10	CL71829
Mercury	ND (0.20)		7470A		1	MJV	12/15/17 12:48	20	40	CL71422
Vanadium	ND (20.0)		6010C		1	KJK	12/19/17 4:32	10	10	CL71829

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Efluent-3
Date Sampled: 12/13/17 12:00
Percent Solids: N/A
Initial Volume: 980
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 12/14/17 14:13

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (102)		MADEP-EPH		1	ZLC	12/15/17 0:41	C7L0211	CL71401
C19-C36 Aliphatics1	ND (102)		MADEP-EPH		1	ZLC	12/15/17 0:41	C7L0211	CL71401
C11-C22 Unadjusted Aromatics1	ND (102)		EPH8270		1	ZLC	12/15/17 1:27	C7L0227	CL71401
C11-C22 Aromatics1,2	ND (102)		EPH8270			ZLC	12/15/17 1:27		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CL71401

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*72 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*89 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*83 %*		*40-140*
Surrogate: O-Terphenyl	*87 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-4
Date Sampled: 12/13/17 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-08
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.74** (N/A)		9040		1	BCA	12/13/17 21:22	S.U.	CL71356
pH Sample Temp	**Aqueous pH measured in water at 16 ºC.** (N/A)								
Total Suspended Solids	**30** (5)		2540D		1	JLK	12/14/17 20:29	mg/L	CL71347

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CL71422 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.69	0.20	ug/L	6.000		95	80-120			
LCS Dup										
Mercury	5.70	0.20	ug/L	6.000		95	80-120	0.2	20	
Batch CL71829 - 200.7/6010BNoDigest										
Blank										
Arsenic	ND	5.0	ug/L							
Lead	ND	1.0	ug/L							
Vanadium	ND	20.0	ug/L							
Blank										
Arsenic	ND	5.0	ug/L							
Lead	ND	1.0	ug/L							
Vanadium	ND	20.0	ug/L							
LCS										
Vanadium	0.5		mg/L	0.5000		100	80-120			
LCS										
Lead	21.4		ug/L	20.28		105	80-120			
LCS										
Arsenic	25.2		ug/L	25.00		101	80-120			
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71301 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1016 [2C]	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1221 [2C]	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1232 [2C]	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1242 [2C]	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1712309

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71301 - 3510C										
Aroclor 1262 [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Aroclor 1268 [2C]	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0442*		ug/L	*0.05000*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0474*		ug/L	*0.05000*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0356*		ug/L	*0.05000*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0430*		ug/L	*0.05000*		*86*	*30-150*			
LCS										
Aroclor 1016	0.76	0.10	ug/L	1.000		76	40-140			
Aroclor 1016 [2C]	0.95	0.10	ug/L	1.000		95	40-140			
Aroclor 1260	0.80	0.10	ug/L	1.000		80	40-140			
Aroclor 1260 [2C]	0.93	0.10	ug/L	1.000		93	40-140			
Surrogate: Decachlorobiphenyl	*0.0468*		ug/L	*0.05000*		*94*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0503*		ug/L	*0.05000*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0371*		ug/L	*0.05000*		*74*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0422*		ug/L	*0.05000*		*84*	*30-150*			
LCS Dup										
Aroclor 1016	0.84	0.10	ug/L	1.000		84	40-140	9	20	
Aroclor 1016 [2C]	1.05	0.10	ug/L	1.000		105	40-140	10	20	
Aroclor 1260	0.92	0.10	ug/L	1.000		92	40-140	14	20	
Aroclor 1260 [2C]	0.90	0.10	ug/L	1.000		90	40-140	4	20	
Surrogate: Decachlorobiphenyl	*0.0491*		ug/L	*0.05000*		*98*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0501*		ug/L	*0.05000*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0360*		ug/L	*0.05000*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0388*		ug/L	*0.05000*		*78*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CL71309 - 3520C										
Blank										
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*77.9*		ug/L	*100.0*		*78*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*134*		ug/L	*150.0*		*89*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*112*		ug/L	*150.0*		*74*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*86.1*		ug/L	*100.0*		*86*	*30-130*			
Surrogate: 2-Fluorophenol	*89.8*		ug/L	*150.0*		*60*	*15-110*			
Surrogate: Nitrobenzene-d5	*83.3*		ug/L	*100.0*		*83*	*30-130*			
Surrogate: Phenol-d6	*101*		ug/L	*150.0*		*68*	*15-110*			
Surrogate: p-Terphenyl-d14	*98.8*		ug/L	*100.0*		*99*	*30-130*			
LCS										
bis(2-Ethylhexyl)phthalate	99.9	6.0	ug/L	100.0		100	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*67.3*		ug/L	*100.0*		*67*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*152*		ug/L	*150.0*		*101*	*15-110*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71309 - 3520C										
Surrogate: 2-Chlorophenol-d4	*102*		ug/L	*150.0*		*68*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*79.8*		ug/L	*100.0*		*80*	*30-130*			
Surrogate: 2-Fluorophenol	*80.6*		ug/L	*150.0*		*54*	*15-110*			
Surrogate: Nitrobenzene-d5	*75.8*		ug/L	*100.0*		*76*	*30-130*			
Surrogate: Phenol-d6	*93.3*		ug/L	*150.0*		*62*	*15-110*			
Surrogate: p-Terphenyl-d14	*88.6*		ug/L	*100.0*		*89*	*30-130*			
LCS Dup										
bis(2-Ethylhexyl)phthalate	104	6.0	ug/L	100.0		104	40-140	4	20	
Surrogate: 1,2-Dichlorobenzene-d4	*69.7*		ug/L	*100.0*		*70*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*157*		ug/L	*150.0*		*105*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*103*		ug/L	*150.0*		*69*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*86.4*		ug/L	*100.0*		*86*	*30-130*			
Surrogate: 2-Fluorophenol	*78.8*		ug/L	*150.0*		*53*	*15-110*			
Surrogate: Nitrobenzene-d5	*80.6*		ug/L	*100.0*		*81*	*30-130*			
Surrogate: Phenol-d6	*94.8*		ug/L	*150.0*		*63*	*15-110*			
Surrogate: p-Terphenyl-d14	*94.8*		ug/L	*100.0*		*95*	*30-130*			
Classical Chemistry										
Batch CL71347 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	32		mg/L	34.10		94	80-120			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CL71401 - 3510C										
Blank										
C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	100	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CL71401 - 3510C										
Surrogate: 1-Chlorooctadecane	*40.0*		ug/L	*50.00*		*80*	*40-140*			
Blank										
2-Methylnaphthalene	ND	5.0	ug/L							
Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	*42.2*		ug/L	*50.00*		*84*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*40.3*		ug/L	*50.00*		*81*	*40-140*			
Surrogate: O-Terphenyl	*42.8*		ug/L	*50.00*		*86*	*40-140*			
LCS										
C19-C36 Aliphatics1	361	100	ug/L	400.0		90	40-140			
C9-C18 Aliphatics1	206	100	ug/L	300.0		69	40-140			
Decane (C10)	27	5	ug/L	50.00		55	40-140			
Docosane (C22)	42	5	ug/L	50.00		84	40-140			
Dodecane (C12)	27	5	ug/L	50.00		55	40-140			
Eicosane (C20)	42	5	ug/L	50.00		84	40-140			
Hexacosane (C26)	42	5	ug/L	50.00		84	40-140			
Hexadecane (C16)	39	5	ug/L	50.00		78	40-140			
Hexatriacontane (C36)	42	5	ug/L	50.00		84	40-140			
Nonadecane (C19)	42	5	ug/L	50.00		85	40-140			
Nonane (C9)	22	5	ug/L	50.00		45	30-140			
Octacosane (C28)	42	5	ug/L	50.00		84	40-140			
Octadecane (C18)	40	5	ug/L	50.00		79	40-140			
Tetracosane (C24)	42	5	ug/L	50.00		84	40-140			
Tetradecane (C14)	36	5	ug/L	50.00		72	40-140			
Triacontane (C30)	42	5	ug/L	50.00		84	40-140			
Surrogate: 1-Chlorooctadecane	*38.8*		ug/L	*50.00*		*78*	*40-140*			
LCS										

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CL71401 - 3510C										
2-Methylnaphthalene	29.3	5.0	ug/L	50.00		59	40-140			
Acenaphthene	32.4	5.0	ug/L	50.00		65	40-140			
Acenaphthylene	33.8	5.0	ug/L	50.00		68	40-140			
Anthracene	38.2	5.0	ug/L	50.00		76	40-140			
Benzo(a)anthracene	40.2	5.0	ug/L	50.00		80	40-140			
Benzo(a)pyrene	40.0	10.0	ug/L	50.00		80	40-140			
Benzo(b)fluoranthene	41.3	5.0	ug/L	50.00		83	40-140			
Benzo(g,h,i)perylene	39.3	10.0	ug/L	50.00		79	40-140			
Benzo(k)fluoranthene	40.6	10.0	ug/L	50.00		81	40-140			
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	684	100	ug/L	850.0		80	40-140			
Chrysene	38.9	10.0	ug/L	50.00		78	40-140			
Dibenzo(a,h)Anthracene	39.7	5.0	ug/L	50.00		79	40-140			
Fluoranthene	39.2	10.0	ug/L	50.00		78	40-140			
Fluorene	34.5	5.0	ug/L	50.00		69	40-140			
Indeno(1,2,3-cd)Pyrene	41.6	5.0	ug/L	50.00		83	40-140			
Naphthalene	32.5	10.0	ug/L	50.00		65	40-140			
Phenanthrene	37.1	5.0	ug/L	50.00		74	40-140			
Pyrene	37.7	5.0	ug/L	50.00		75	40-140			
Surrogate: 2-Bromonaphthalene	*44.0*		ug/L	*50.00*		*88*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*42.4*		ug/L	*50.00*		*85*	*40-140*			
Surrogate: O-Terphenyl	*38.1*		ug/L	*50.00*		*76*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	327	100	ug/L	400.0		82	40-140	10	25	
C9-C18 Aliphatics1	192	100	ug/L	300.0		64	40-140	7	25	
Decane (C10)	26	5	ug/L	50.00		51	40-140	7	25	
Docosane (C22)	39	5	ug/L	50.00		79	40-140	6	25	
Dodecane (C12)	26	5	ug/L	50.00		52	40-140	5	25	
Eicosane (C20)	40	5	ug/L	50.00		79	40-140	6	25	
Hexacosane (C26)	39	5	ug/L	50.00		79	40-140	6	25	
Hexadecane (C16)	37	5	ug/L	50.00		73	40-140	6	25	
Hexatriacontane (C36)	40	5	ug/L	50.00		80	40-140	5	25	
Nonadecane (C19)	40	5	ug/L	50.00		80	40-140	5	25	
Nonane (C9)	21	5	ug/L	50.00		41	30-140	8	25	
Octacosane (C28)	40	5	ug/L	50.00		79	40-140	6	25	
Octadecane (C18)	38	5	ug/L	50.00		75	40-140	6	25	
Tetracosane (C24)	40	5	ug/L	50.00		79	40-140	6	25	
Tetradecane (C14)	34	5	ug/L	50.00		68	40-140	4	25	
Triacontane (C30)	40	5	ug/L	50.00		79	40-140	6	25	
Surrogate: 1-Chlorooctadecane	*35.5*		ug/L	*50.00*		*71*	*40-140*			
LCS Dup										

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CL71401 - 3510C										
2-Methylnaphthalene	26.3	5.0	ug/L	50.00		53	40-140	11	20	
Acenaphthene	29.6	5.0	ug/L	50.00		59	40-140	9	20	
Acenaphthylene	29.8	5.0	ug/L	50.00		60	40-140	12	20	
Anthracene	33.3	5.0	ug/L	50.00		67	40-140	14	20	
Benzo(a)anthracene	35.6	5.0	ug/L	50.00		71	40-140	12	20	
Benzo(a)pyrene	34.9	10.0	ug/L	50.00		70	40-140	14	20	
Benzo(b)fluoranthene	35.7	5.0	ug/L	50.00		71	40-140	15	20	
Benzo(g,h,i)perylene	34.3	10.0	ug/L	50.00		69	40-140	14	20	
Benzo(k)fluoranthene	35.6	10.0	ug/L	50.00		71	40-140	13	20	
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	623	100	ug/L	850.0		73	40-140	9	25	
Chrysene	34.9	10.0	ug/L	50.00		70	40-140	11	20	
Dibenzo(a,h)Anthracene	35.2	5.0	ug/L	50.00		70	40-140	12	20	
Fluoranthene	34.9	10.0	ug/L	50.00		70	40-140	12	20	
Fluorene	31.1	5.0	ug/L	50.00		62	40-140	10	20	
Indeno(1,2,3-cd)Pyrene	36.7	5.0	ug/L	50.00		73	40-140	12	20	
Naphthalene	29.1	10.0	ug/L	50.00		58	40-140	11	20	
Phenanthrene	33.0	5.0	ug/L	50.00		66	40-140	12	20	
Pyrene	34.1	5.0	ug/L	50.00		68	40-140	10	20	
Surrogate: 2-Bromonaphthalene	*42.3*		ug/L	*50.00*		*85*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*40.5*		ug/L	*50.00*		*81*	*40-140*			
Surrogate: O-Terphenyl	*36.0*		ug/L	*50.00*		*72*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1712309

Notes and Definitions

Z16a	Aqueous pH measured in water at 16 ºC.
Z16	Aqueous pH measured in water at 15.6 ºC.
Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712309
Date Received: 12/13/2017
Project Due Date: 12/20/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.4 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	190457	Yes	NA	Yes	1L Amber - Unpres	NP	
01	190458	Yes	NA	Yes	1L Amber - Unpres	NP	
01	190459	Yes	NA	Yes	1L Amber - Unpres	NP	
01	190460	Yes	NA	Yes	1L Amber - Unpres	NP	
02	190469	Yes	NA	Yes	250 mL Poly - Unpres	NP	
03	190465	Yes	NA	Yes	1L Amber - HCl	HCl	
03	190466	Yes	NA	Yes	1L Amber - HCl	HCl	
04	190471	Yes	NA	Yes	1L Poly - Unpres	NP	
05	190461	Yes	NA	Yes	1L Amber - Unpres	NP	
05	190462	Yes	NA	Yes	1L Amber - Unpres	NP	
05	190463	Yes	NA	Yes	1L Amber - Unpres	NP	
05	190464	Yes	NA	Yes	1L Amber - Unpres	NP	
06	190470	Yes	NA	Yes	250 mL Poly - Unpres	NP	
07	190467	Yes	NA	Yes	1L Amber - HCl	HCl	
07	190468	Yes	NA	Yes	1L Amber - HCl	HCl	
08	190472	Yes	NA	Yes	1L Poly - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 12/13/17 1922
Reviewed

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712309

Date Received: 12/13/2017

By: [signature]

Date & Time: 12/13/17 1926

Delivered By: [signature]

12/13/17 1927

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1712309

Turn Time (5-Day) Rush

Regulatory State

Reporting Limits NRWQC(SW)

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Electonic Deliverables ☐ Limit Checker ☑ Standard Excel ☐ Other (Please Specify →)

Company Name	Project #	Project Name
SPS New England/ Charter Contracting Co, LLC	454	Wynn Dredging

Contact Person	Address
Katherine Mason	98 Elm St

City	State	Zip Code	PO #
Salisbury	MA	01952	

Telephone Number	FAX Number	Email Address
617-608-7317		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Dissolved Metals (Arsenic, Lead, Mercury, Vanadium)	TSS/pH	EPH	PCBs	sVOCs (2-ethylhexyl phthalate)
01	12/13/17	11:50 AM	Grab	Aqueous	171101-Wynn-CC-Influent-1				2	2
02	12/13/17	11:50 AM	Grab	Aqueous	171101-Wynn-CC-Influent-2	1				
03	12/13/17	11:50 AM	Grab	Aqueous	171101-Wynn-CC-Influent-3			2		
04	12/13/17	11:50 AM	Grab	Aqueous	171101-Wynn-CC-Influent-4		1			
05	12/13/17	12:00 PM	Grab	Aqueous	171101-Wynn-CC-Effluent-1				2	2
06	12/13/17	12:00 PM	Grab	Aqueous	171101-Wynn-CC-Effluent-2	1				
07	12/13/17	12:00 PM	Grab	Aqueous	171101-Wynn-CC-Effluent-3			2		
08	12/13/17	1200 PM	Grab	Aqueous	171101-Wynn-CC-Effluent-4		1			

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	G - Glass	O-Other	P-Poly	S-Sterile	V-Vial	P	P	AG	AG	AG																			
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*	3	6	6	6	6																	
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Other*	1	1	2	1	1																	
											Number of Containers per Sample:	2	2	4	4	4																	

Laboratory Use Only

Cooler Present: ✓

Seals Intact: —

Cooler Temperature: Ectemp 3.1 °C 12-13-17 17:54

Sampled by : Monica DeCicco

Comments: **Please specify "Other" preservative and containers types in this space**

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12/13, 13:15	[signature] 12-13-17 13:55	[signature] 12-13-17 17:54	[signature] 12/13/17 KD
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Dredging (454)
ESS Laboratory Work Order Number: 1801282

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:18 pm, Jan 24, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

SAMPLE RECEIPT

The following samples were received on January 17, 2018 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals, SVOA, and EPH were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
1801282-01	171101-Wynn-CC-Influent	Aqueous	2540D, 6010C, 7470A, 8082A, 8270D, 9040, EPH8270, MADEP-EPH
1801282-02	171101-Wynn-CC-Effluent	Aqueous	2540D, 6010C, 7470A, 8082A, 8270D, 9040, EPH8270, MADEP-EPH

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1801282

PROJECT NARRATIVE

Dissolved Metals

1801282-01 **Elevated Method Reporting Limits due to sample matrix (EL).**
Arsenic , Lead

1801282-02 **Elevated Method Reporting Limits due to sample matrix (EL).**
Arsenic , Lead

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1801282-01 through 1801282-02**

Matrices: ( ) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air (X) Other: Aqueous

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	( ) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	(X) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes (X) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for '"Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes ( ) No (X)*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes (X) No ( )*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: January 24, 2018

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	**EL** ND (50.0)		6010C		1	KJK	01/19/18 16:27	10	10	CA81925
Lead	**EL** ND (20.0)		6010C		1	KJK	01/19/18 16:27	10	10	CA81925
Mercury	ND (0.20)		7470A		1	MJV	01/19/18 11:22	20	40	CA81832
Vanadium	ND (20.0)		6010C		1	KJK	01/19/18 16:27	10	10	CA81925

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 1/18/18 9:58

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/18/18 12:04		CA81805
Aroclor 1221	ND (0.09)		8082A		1	01/18/18 12:04		CA81805
Aroclor 1232	ND (0.09)		8082A		1	01/18/18 12:04		CA81805
Aroclor 1242	ND (0.09)		8082A		1	01/18/18 12:04		CA81805
Aroclor 1248	ND (0.09)		8082A		1	01/18/18 12:04		CA81805
Aroclor 1254	ND (0.09)		8082A		1	01/18/18 12:04		CA81805
Aroclor 1260	ND (0.09)		8082A		1	01/18/18 12:04		CA81805
Aroclor 1262	ND (0.09)		8082A		1	01/18/18 12:04		CA81805
Aroclor 1268	ND (0.09)		8082A		1	01/18/18 12:04		CA81805

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*66 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A
Initial Volume: 990
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 1/19/18 18:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	ND (6.1)		8270D		1	01/23/18 18:03	C8A0284	CA81903

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*88 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*79 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*
Surrogate: 2-Fluorophenol	*70 %*		*15-110*
Surrogate: Nitrobenzene-d5	*85 %*		*30-130*
Surrogate: Phenol-d6	*81 %*		*15-110*
Surrogate: p-Terphenyl-d14	*104 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.44** (N/A)		9040		1	CCP	01/17/18 19:09	S.U.	CA81730
pH Sample Temp	**Aqueous pH measured in water at 15.6 ºC.** (N/A)								
Total Suspended Solids	**30** (5)		2540D		1	EEM	01/18/18 14:00	mg/L	CA81812

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous
Units: ug/L

Prepared: 1/18/18 15:00

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (99)		MADEP-EPH		1	ZLC	01/19/18 16:33	C8A0211	CA81806
C19-C36 Aliphatics1	ND (99)		MADEP-EPH		1	ZLC	01/19/18 16:33	C8A0211	CA81806
C11-C22 Unadjusted Aromatics1	ND (99.0)		EPH8270		1	ZLC	01/19/18 17:44	C8A0229	CA81806
C11-C22 Aromatics1,2	ND (99.0)		EPH8270			ZLC	01/19/18 17:44		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CA81806

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*78 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*100 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*91 %*		*40-140*
Surrogate: O-Terphenyl	*84 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	**EL** ND (50.0)		6010C		1	KJK	01/19/18 16:32	10	10	CA81925
Lead	**EL** ND (40.0)		6010C		2	KJK	01/19/18 17:24	10	10	CA81925
Mercury	ND (0.20)		7470A		1	MJV	01/19/18 11:25	20	40	CA81832
Vanadium	ND (20.0)		6010C		1	KJK	01/19/18 16:32	10	10	CA81925

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 1/18/18 9:58

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.10)		8082A		1	01/18/18 12:23		CA81805
Aroclor 1221	ND (0.10)		8082A		1	01/18/18 12:23		CA81805
Aroclor 1232	ND (0.10)		8082A		1	01/18/18 12:23		CA81805
Aroclor 1242	ND (0.10)		8082A		1	01/18/18 12:23		CA81805
Aroclor 1248	ND (0.10)		8082A		1	01/18/18 12:23		CA81805
Aroclor 1254	ND (0.10)		8082A		1	01/18/18 12:23		CA81805
Aroclor 1260	ND (0.10)		8082A		1	01/18/18 12:23		CA81805
Aroclor 1262	ND (0.10)		8082A		1	01/18/18 12:23		CA81805
Aroclor 1268	ND (0.10)		8082A		1	01/18/18 12:23		CA81805

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 1/19/18 18:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	ND (5.9)		8270D		1	01/23/18 18:38	C8A0284	CA81903

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*86 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*93 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*90 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*96 %*		*30-130*
Surrogate: 2-Fluorophenol	*84 %*		*15-110*
Surrogate: Nitrobenzene-d5	*95 %*		*30-130*
Surrogate: Phenol-d6	*91 %*		*15-110*
Surrogate: p-Terphenyl-d14	*109 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.80** (N/A)		9040		1	CCP	01/17/18 19:09	S.U.	CA81730
pH Sample Temp	**Aqueous pH measured in water at 15.9 ºC.** (N/A)								
Total Suspended Solids	**27** (5)		2540D		1	EEM	01/18/18 14:00	mg/L	CA81812

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A
Initial Volume: 1040
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous
Units: ug/L

Prepared: 1/18/18 15:00

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (96)		MADEP-EPH		1	ZLC	01/19/18 17:20	C8A0211	CA81806
C19-C36 Aliphatics1	ND (96)		MADEP-EPH		1	ZLC	01/19/18 17:20	C8A0211	CA81806
C11-C22 Unadjusted Aromatics1	ND (96.2)		EPH8270		1	ZLC	01/19/18 18:21	C8A0229	CA81806
C11-C22 Aromatics1,2	ND (96.2)		EPH8270			ZLC	01/19/18 18:21		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CA81806

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*79 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*98 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*88 %*		*40-140*
Surrogate: O-Terphenyl	*83 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CA81832 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.73	0.20	ug/L	6.000		96	80-120			
LCS Dup										
Mercury	5.82	0.20	ug/L	6.000		97	80-120	2	20	
Batch CA81925 - 200.7/6010BNoDigest										
Blank										
Arsenic	ND	50.0	ug/L							
Lead	ND	20.0	ug/L							
Vanadium	ND	20.0	ug/L							
Blank										
Arsenic	ND	50.0	ug/L							
Lead	ND	20.0	ug/L							
Vanadium	ND	20.0	ug/L							
LCS										
Arsenic	0.5		mg/L	0.5000		97	80-120			
Lead	0.5		mg/L	0.5000		98	80-120			
Vanadium	0.5		mg/L	0.5000		97	80-120			
8082A Polychlorinated Biphenyls (PCB)										
Batch CA81805 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1016 [2C]	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1221 [2C]	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1232 [2C]	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1242 [2C]	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Aroclor 1268 [2C]	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0417*		ug/L	*0.05000*		*83*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CA81805 - 3510C										
Surrogate: Decachlorobiphenyl [2C]	*0.0452*		ug/L	*0.05000*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0276*		ug/L	*0.05000*		*55*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0324*		ug/L	*0.05000*		*65*	*30-150*			
LCS										
Aroclor 1016	1.03	0.10	ug/L	1.000		103	40-140			
Aroclor 1016 [2C]	1.05	0.10	ug/L	1.000		105	40-140			
Aroclor 1260	1.10	0.10	ug/L	1.000		110	40-140			
Aroclor 1260 [2C]	1.01	0.10	ug/L	1.000		101	40-140			
Surrogate: Decachlorobiphenyl	*0.0443*		ug/L	*0.05000*		*89*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0484*		ug/L	*0.05000*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0374*		ug/L	*0.05000*		*75*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0368*		ug/L	*0.05000*		*74*	*30-150*			
LCS Dup										
Aroclor 1016	1.02	0.10	ug/L	1.000		102	40-140	1	20	
Aroclor 1016 [2C]	1.05	0.10	ug/L	1.000		105	40-140	0.008	20	
Aroclor 1260	1.08	0.10	ug/L	1.000		108	40-140	2	20	
Aroclor 1260 [2C]	1.05	0.10	ug/L	1.000		105	40-140	3	20	
Surrogate: Decachlorobiphenyl	*0.0420*		ug/L	*0.05000*		*84*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0442*		ug/L	*0.05000*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0346*		ug/L	*0.05000*		*69*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0344*		ug/L	*0.05000*		*69*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CA81903 - 3520C										
Blank										
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*46.8*		ug/L	*100.0*		*47*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*73.2*		ug/L	*150.0*		*49*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*63.4*		ug/L	*150.0*		*42*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*48.8*		ug/L	*100.0*		*49*	*30-130*			
Surrogate: 2-Fluorophenol	*48.9*		ug/L	*150.0*		*33*	*15-110*			
Surrogate: Nitrobenzene-d5	*51.4*		ug/L	*100.0*		*51*	*30-130*			
Surrogate: Phenol-d6	*66.3*		ug/L	*150.0*		*44*	*15-110*			
Surrogate: p-Terphenyl-d14	*62.3*		ug/L	*100.0*		*62*	*30-130*			
LCS										
bis(2-Ethylhexyl)phthalate	90.8	6.0	ug/L	100.0		91	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*90.2*		ug/L	*100.0*		*90*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*152*		ug/L	*150.0*		*102*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*110*		ug/L	*150.0*		*74*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*98.1*		ug/L	*100.0*		*98*	*30-130*			
Surrogate: 2-Fluorophenol	*79.0*		ug/L	*150.0*		*53*	*15-110*			
Surrogate: Nitrobenzene-d5	*102*		ug/L	*100.0*		*102*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA81903 - 3520C										
Surrogate: Phenol-d6	*117*		ug/L	*150.0*		*78*	*15-110*			
Surrogate: p-Terphenyl-d14	*115*		ug/L	*100.0*		*115*	*30-130*			
LCS Dup										
bis(2-Ethylhexyl)phthalate	89.5	6.0	ug/L	100.0		89	40-140	1	20	
Surrogate: 1,2-Dichlorobenzene-d4	*89.3*		ug/L	*100.0*		*89*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*151*		ug/L	*150.0*		*100*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*121*		ug/L	*150.0*		*81*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*97.6*		ug/L	*100.0*		*98*	*30-130*			
Surrogate: 2-Fluorophenol	*87.0*		ug/L	*150.0*		*58*	*15-110*			
Surrogate: Nitrobenzene-d5	*100*		ug/L	*100.0*		*100*	*30-130*			
Surrogate: Phenol-d6	*127*		ug/L	*150.0*		*84*	*15-110*			
Surrogate: p-Terphenyl-d14	*112*		ug/L	*100.0*		*112*	*30-130*			
Classical Chemistry										
Batch CA81812 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	34		mg/L	34.10		100	80-120			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CA81806 - 3510C										
Blank										
C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	100	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							
Surrogate: 1-Chlorooctadecane	*42.9*		ug/L	*50.00*		*86*	*40-140*			
Blank										
2-Methylnaphthalene	ND	5.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CA81806 - 3510C										
Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	*46.1*		ug/L	*50.00*		*92*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*42.1*		ug/L	*50.00*		*84*	*40-140*			
Surrogate: O-Terphenyl	*43.3*		ug/L	*50.00*		*87*	*40-140*			
LCS										
C19-C36 Aliphatics1	346	100	ug/L	400.0		87	40-140			
C9-C18 Aliphatics1	194	100	ug/L	300.0		65	40-140			
Decane (C10)	26	5	ug/L	50.00		53	40-140			
Docosane (C22)	42	5	ug/L	50.00		83	40-140			
Dodecane (C12)	31	5	ug/L	50.00		61	40-140			
Eicosane (C20)	41	5	ug/L	50.00		82	40-140			
Hexacosane (C26)	42	5	ug/L	50.00		85	40-140			
Hexadecane (C16)	38	5	ug/L	50.00		76	40-140			
Hexatriacontane (C36)	43	5	ug/L	50.00		87	40-140			
Nonadecane (C19)	41	5	ug/L	50.00		82	40-140			
Nonane (C9)	21	5	ug/L	50.00		43	30-140			
Octacosane (C28)	43	5	ug/L	50.00		86	40-140			
Octadecane (C18)	39	5	ug/L	50.00		77	40-140			
Tetracosane (C24)	42	5	ug/L	50.00		84	40-140			
Tetradecane (C14)	35	5	ug/L	50.00		70	40-140			
Triacontane (C30)	44	5	ug/L	50.00		89	40-140			
Surrogate: 1-Chlorooctadecane	*40.8*		ug/L	*50.00*		*82*	*40-140*			
LCS										
2-Methylnaphthalene	26.6	5.0	ug/L	50.00		53	40-140			
Acenaphthene	31.0	5.0	ug/L	50.00		62	40-140			
Acenaphthylene	31.0	5.0	ug/L	50.00		62	40-140			
Anthracene	36.8	5.0	ug/L	50.00		74	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CA81806 - 3510C										
Benzo(a)anthracene	39.1	5.0	ug/L	50.00		78	40-140			
Benzo(a)pyrene	37.8	10.0	ug/L	50.00		76	40-140			
Benzo(b)fluoranthene	39.4	5.0	ug/L	50.00		79	40-140			
Benzo(g,h,i)perylene	35.1	10.0	ug/L	50.00		70	40-140			
Benzo(k)fluoranthene	37.9	10.0	ug/L	50.00		76	40-140			
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	556	100	ug/L	850.0		65	40-140			
Chrysene	37.1	10.0	ug/L	50.00		74	40-140			
Dibenzo(a,h)Anthracene	35.6	5.0	ug/L	50.00		71	40-140			
Fluoranthene	36.0	10.0	ug/L	50.00		72	40-140			
Fluorene	33.7	5.0	ug/L	50.00		67	40-140			
Indeno(1,2,3-cd)Pyrene	38.4	5.0	ug/L	50.00		77	40-140			
Naphthalene	28.3	10.0	ug/L	50.00		57	40-140			
Phenanthrene	34.6	5.0	ug/L	50.00		69	40-140			
Pyrene	35.9	5.0	ug/L	50.00		72	40-140			
Surrogate: 2-Bromonaphthalene	*48.2*		ug/L	*50.00*		*96*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*44.6*		ug/L	*50.00*		*89*	*40-140*			
Surrogate: O-Terphenyl	*45.3*		ug/L	*50.00*		*91*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	362	100	ug/L	400.0		90	40-140	4	25	
C9-C18 Aliphatics1	214	100	ug/L	300.0		71	40-140	10	25	
Decane (C10)	28	5	ug/L	50.00		57	40-140	8	25	
Docosane (C22)	45	5	ug/L	50.00		90	40-140	7	25	
Dodecane (C12)	33	5	ug/L	50.00		66	40-140	8	25	
Eicosane (C20)	44	5	ug/L	50.00		89	40-140	8	25	
Hexacosane (C26)	46	5	ug/L	50.00		91	40-140	7	25	
Hexadecane (C16)	43	5	ug/L	50.00		85	40-140	11	25	
Hexatriacontane (C36)	47	5	ug/L	50.00		93	40-140	7	25	
Nonadecane (C19)	45	5	ug/L	50.00		90	40-140	8	25	
Nonane (C9)	23	5	ug/L	50.00		46	30-140	8	25	
Octacosane (C28)	46	5	ug/L	50.00		93	40-140	7	25	
Octadecane (C18)	43	5	ug/L	50.00		85	40-140	9	25	
Tetracosane (C24)	45	5	ug/L	50.00		91	40-140	7	25	
Tetradecane (C14)	39	5	ug/L	50.00		78	40-140	11	25	
Triacontane (C30)	48	5	ug/L	50.00		96	40-140	8	25	
Surrogate: 1-Chlorooctadecane	*42.6*		ug/L	*50.00*		*85*	*40-140*			
LCS Dup										
2-Methylnaphthalene	29.6	5.0	ug/L	50.00		59	40-140	10	20	
Acenaphthene	33.6	5.0	ug/L	50.00		67	40-140	8	20	
Acenaphthylene	34.7	5.0	ug/L	50.00		69	40-140	11	20	
Anthracene	38.8	5.0	ug/L	50.00		78	40-140	6	20	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CA81806 - 3510C										
Benzo(a)anthracene	39.4	5.0	ug/L	50.00		79	40-140	0.9	20	
Benzo(a)pyrene	40.2	10.0	ug/L	50.00		80	40-140	6	20	
Benzo(b)fluoranthene	41.6	5.0	ug/L	50.00		83	40-140	6	20	
Benzo(g,h,i)perylene	38.4	10.0	ug/L	50.00		77	40-140	9	20	
Benzo(k)fluoranthene	39.4	10.0	ug/L	50.00		79	40-140	4	20	
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	605	100	ug/L	850.0		71	40-140	8	25	
Chrysene	38.6	10.0	ug/L	50.00		77	40-140	4	20	
Dibenzo(a,h)Anthracene	39.6	5.0	ug/L	50.00		79	40-140	11	20	
Fluoranthene	37.4	10.0	ug/L	50.00		75	40-140	4	20	
Fluorene	36.3	5.0	ug/L	50.00		73	40-140	8	20	
Indeno(1,2,3-cd)Pyrene	42.0	5.0	ug/L	50.00		84	40-140	9	20	
Naphthalene	32.1	10.0	ug/L	50.00		64	40-140	12	20	
Phenanthrene	36.9	5.0	ug/L	50.00		74	40-140	6	20	
Pyrene	37.5	5.0	ug/L	50.00		75	40-140	4	20	
Surrogate: 2-Bromonaphthalene	*49.7*		ug/L	*50.00*		*99*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*44.1*		ug/L	*50.00*		*88*	*40-140*			
Surrogate: O-Terphenyl	*45.9*		ug/L	*50.00*		*92*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1801282

Notes and Definitions

Z16a	Aqueous pH measured in water at 15.9 ºC.
Z16	Aqueous pH measured in water at 15.6 ºC.
Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
EL	Elevated Method Reporting Limits due to sample matrix (EL).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1801282
Date Received: 1/17/2018
Project Due Date: 1/24/2018
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.9 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** (Yes) / No / NA
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / (No)
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	196132	Yes	NA	Yes	250 mL Poly - Unpres	NP	
01	196134	Yes	NA	Yes	1L Poly - Unpres	NP	
01	196139	Yes	NA	Yes	1L Amber - Unpres	NP	
01	196140	Yes	NA	Yes	1L Amber - Unpres	NP	
01	196141	Yes	NA	Yes	1L Amber - Unpres	NP	
01	196142	Yes	NA	Yes	1L Amber - Unpres	NP	
01	196145	Yes	NA	Yes	1L Amber - HCl	HCl	
01	196146	Yes	NA	Yes	1L Amber - HCl	HCl	
02	196131	Yes	NA	Yes	250 mL Poly - Unpres	NP	
02	196133	Yes	NA	Yes	1L Poly - Unpres	NP	
02	196135	Yes	NA	Yes	1L Amber - Unpres	NP	
02	196136	Yes	NA	Yes	1L Amber - Unpres	NP	
02	196137	Yes	NA	Yes	1L Amber - Unpres	NP	
02	196138	Yes	NA	Yes	1L Amber - Unpres	NP	
02	196143	Yes	NA	Yes	1L Amber - HCl	HCl	
02	196144	Yes	NA	Yes	1L Amber - HCl	HCl	

2nd Review
Are barcode labels on correct containers? (Yes) / No

Completed By: [signature] Date & Time: 1/17/18 1644
Reviewed

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1801282

Date Received: 1/17/2018

By: [signature] Date & Time: 1/17/18 1728

Delivered By: [signature] 1/17/18 1728

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab #	1801282
Turn Time	(5-Day) Rush
Regulatory State	
Reporting Limits	NRWQC(SW)
Is this project for any of the following?:	○ CT RCP ○ MA MCP ○ RGP
Electonic Deliverables	☐ Limit Checker ☑ Standard Excel ☐ Other (Please Specify →)

Company Name	Project #	Project Name
SPS New England/ Charter Contracting Co, LLC	454	Wynn Dredging

Contact Person	Address
Katherine Mason	98 Elm St

City	State	Zip Code	PO #
Salisbury	MA	01952	

Telephone Number	FAX Number	Email Address
617-608-7317		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Dissolved Metals (Arsenic, Lead, Mercury, Vanadium)	TSS/pH	EPH	PCBs	sVOCs (2-ethylhexyl phthalate)
1 01	1/17/18	9:40 AM	Grab	Aqueous	171101-Wynn-CC-Influent-1				2	2
1 02	1/17/18	9:40 AM	Grab	Aqueous	171101-Wynn-CC-Influent-2	1				
1 03	1/17/18	9:40 AM	Grab	Aqueous	171101-Wynn-CC-Influent-3			2		
1 04	1/17/18	9:40 AM	Grab	Aqueous	171101-Wynn-CC-Influent-4		1			
2 05	1/17/18	9:18 AM	Grab	Aqueous	171101-Wynn-CC-Effluent-1				2	2
2 06	1/17/18	9:18 AM	Grab	Aqueous	171101-Wynn-CC-Effluent-2	1				
2 07	1/17/18	9:18 AM	Grab	Aqueous	171101-Wynn-CC-Effluent-3			2		
2 08	1/17/18	9:18 AM	Grab	Aqueous	171101-Wynn-CC-Effluent-4		1			
RE 1/17/18										
Container Type:	AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial					P	P	AG	AG	AG
Container Volume:	1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*					3	6	6	6	6
Preservation Code:	1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*					1	1	2	1	1
					Number of Containers per Sample:	2	2	4	4	4

Laboratory Use Only

Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C Ice temp: 2.9

Sampled by : Monica DeCicco

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
01/17/18 13:25	1/17/18 13:25	1/17/18 15:59	1/17/18 1635
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Dredging (454)
ESS Laboratory Work Order Number: 1802262

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 12:31 pm, Feb 21, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

SAMPLE RECEIPT

The following samples were received on February 14, 2018 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals, SVOA and EPH were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
1802262-01	171101-Wynn-CC-Influent	Aqueous	2540D, 6010C, 6020A, 7010, 7470A, 8082A, 8270D, 9040, EPH8270, MADEP-EPH
1802262-02	171101-Wynn-CC-Effluent	Aqueous	2540D, 6010C, 6020A, 7010, 7470A, 8082A, 8270D, 9040, EPH8270, MADEP-EPH

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

PROJECT NARRATIVE

Dissolved Metals

1802262-01 **Elevated Method Reporting Limits due to sample matrix (EL).**
Arsenic

1802262-02 **Elevated Method Reporting Limits due to sample matrix (EL).**
Arsenic

MADEP-EPH Extractable Petroleum Hydrocarbons

C8B0209-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Benzo(g,h,i)perylene (33% @ 20%), Dibenzo(a,h)Anthracene (20% @ 20%), Indeno(1,2,3-cd)Pyrene (22% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1802262-01 through 1802262-02**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	(X) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	( ) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
( ) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	(X) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes (X) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for '"Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes ( ) No (X)*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: February 21, 2018

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	**EL** ND (25.0)		7010		5	MJV	02/19/18 13:58	10	10	CB81513
Lead	ND (1.0)		6020A		1	NAR	02/16/18 15:55	10	10	CB81513
Mercury	ND (0.20)		7470A		1	MJV	02/16/18 12:31	20	40	CB81528
Vanadium	ND (20.0)		6010C		1	KJK	02/15/18 11:53	10	10	CB81513

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 2/15/18 9:30

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.10)		8082A		1	02/16/18 10:07		CB81407
Aroclor 1221	ND (0.10)		8082A		1	02/16/18 10:07		CB81407
Aroclor 1232	ND (0.10)		8082A		1	02/16/18 10:07		CB81407
Aroclor 1242	ND (0.10)		8082A		1	02/16/18 10:07		CB81407
Aroclor 1248	ND (0.10)		8082A		1	02/16/18 10:07		CB81407
Aroclor 1254	ND (0.10)		8082A		1	02/16/18 10:07		CB81407
Aroclor 1260	ND (0.10)		8082A		1	02/16/18 10:07		CB81407
Aroclor 1262	ND (0.10)		8082A		1	02/16/18 10:07		CB81407
Aroclor 1268	ND (0.10)		8082A		1	02/16/18 10:07		CB81407

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 2/14/18 17:35

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	ND (5.9)		8270D		1	02/16/18 17:13	C8B0237	CB81322

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*82 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*89 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*81 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*88 %*		*30-130*
Surrogate: 2-Fluorophenol	*76 %*		*15-110*
Surrogate: Nitrobenzene-d5	*85 %*		*30-130*
Surrogate: Phenol-d6	*83 %*		*15-110*
Surrogate: p-Terphenyl-d14	*95 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.99** (N/A)		9040		1	CCP	02/14/18 19:41	S.U.	CB81424
pH Sample Temp	**Aqueous pH measured in water at 15.5 ºC.** (N/A)								
Total Suspended Solids	**12** (5)		2540D		1	JLK	02/15/18 21:29	mg/L	CB81541

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous
Units: ug/L

Prepared: 2/15/18 14:05

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (99)		MADEP-EPH		1	ZLC	02/15/18 21:16	C8B0192	CB81502
C19-C36 Aliphatics1	ND (99)		MADEP-EPH		1	ZLC	02/15/18 21:16	C8B0192	CB81502
C11-C22 Unadjusted Aromatics1	ND (99.0)		EPH8270		1	VSC	02/17/18 12:22	C8B0244	CB81502
C11-C22 Aromatics1,2	ND (99.0)		EPH8270			VSC	02/17/18 12:22		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CB81502

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*68 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*97 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*90 %*		*40-140*
Surrogate: O-Terphenyl	*86 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	**EL** ND (25.0)		7010		5	MJV	02/19/18 14:09	10	10	CB81513
Lead	ND (1.0)		6020A		1	NAR	02/16/18 16:01	10	10	CB81513
Mercury	ND (0.20)		7470A		1	MJV	02/16/18 12:33	20	40	CB81528
Vanadium	ND (20.0)		6010C		1	KJK	02/15/18 11:59	10	10	CB81513

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 2/15/18 9:30

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.10)		8082A		1	02/16/18 10:26		CB81407
Aroclor 1221	ND (0.10)		8082A		1	02/16/18 10:26		CB81407
Aroclor 1232	ND (0.10)		8082A		1	02/16/18 10:26		CB81407
Aroclor 1242	ND (0.10)		8082A		1	02/16/18 10:26		CB81407
Aroclor 1248	ND (0.10)		8082A		1	02/16/18 10:26		CB81407
Aroclor 1254	ND (0.10)		8082A		1	02/16/18 10:26		CB81407
Aroclor 1260	ND (0.10)		8082A		1	02/16/18 10:26		CB81407
Aroclor 1262	ND (0.10)		8082A		1	02/16/18 10:26		CB81407
Aroclor 1268	ND (0.10)		8082A		1	02/16/18 10:26		CB81407

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*77 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 2/14/18 17:35

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Ethylhexyl)phthalate	ND (5.8)		8270D		1	02/16/18 17:47	C8B0237	CB81322

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*69 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*64 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*67 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*73 %*		*30-130*
Surrogate: 2-Fluorophenol	*64 %*		*15-110*
Surrogate: Nitrobenzene-d5	*69 %*		*30-130*
Surrogate: Phenol-d6	*68 %*		*15-110*
Surrogate: p-Terphenyl-d14	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
pH	**7.82** (N/A)		9040		1	CCP	02/14/18 19:41	S.U.	CB81424
pH Sample Temp	**Aqueous pH measured in water at 15.6 ºC.** (N/A)								
Total Suspended Solids	**48** (5)		2540D		1	JLK	02/15/18 21:29	mg/L	CB81541

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous
Units: ug/L

Prepared: 2/15/18 14:05

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (100)		MADEP-EPH		1	ZLC	02/15/18 22:04	C8B0192	CB81502
C19-C36 Aliphatics1	ND (100)		MADEP-EPH		1	ZLC	02/15/18 22:04	C8B0192	CB81502
C11-C22 Unadjusted Aromatics1	ND (100)		EPH8270		1	VSC	02/17/18 12:58	C8B0244	CB81502
C11-C22 Aromatics1,2	ND (100)		EPH8270			VSC	02/17/18 12:58		[CALC]
Preservative:	**pH <= 2**		MADEP-EPH			ZLC			CB81502

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*68 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*103 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*95 %*		*40-140*
Surrogate: O-Terphenyl	*80 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CB81513 - 200.7/6010BNoDigest										
Blank										
Arsenic	ND	5.0	ug/L							
Lead	ND	1.0	ug/L							
Blank										
Lead	ND	1.0	ug/L							
Vanadium	ND	20.0	ug/L							
LCS										
Vanadium	0.5		mg/L	0.5000		97	80-120			
LCS										
Lead	19.6		ug/L	20.28		97	80-120			
LCS										
Arsenic	23.5		ug/L	25.00		94	80-120			
Batch CB81528 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	6.06	0.20	ug/L	6.000		101	80-120			
LCS Dup										
Mercury	6.04	0.20	ug/L	6.000		101	80-120	0.2	20	
8082A Polychlorinated Biphenyls (PCB)										
Batch CB81407 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1016 [2C]	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1221 [2C]	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1232 [2C]	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1242 [2C]	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Aroclor 1268 [2C]	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0396*		ug/L	*0.05000*		*79*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CB81407 - 3510C										
Surrogate: Decachlorobiphenyl [2C]	*0.0378*		ug/L	*0.05000*		*76*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0299*		ug/L	*0.05000*		*60*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0311*		ug/L	*0.05000*		*62*	*30-150*			
LCS										
Aroclor 1016	0.85	0.10	ug/L	1.000		85	40-140			
Aroclor 1016 [2C]	0.77	0.10	ug/L	1.000		77	40-140			
Aroclor 1260	0.91	0.10	ug/L	1.000		91	40-140			
Aroclor 1260 [2C]	0.86	0.10	ug/L	1.000		86	40-140			
Surrogate: Decachlorobiphenyl	*0.0495*		ug/L	*0.05000*		*99*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0446*		ug/L	*0.05000*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0413*		ug/L	*0.05000*		*83*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0401*		ug/L	*0.05000*		*80*	*30-150*			
LCS Dup										
Aroclor 1016	0.86	0.10	ug/L	1.000		86	40-140	1	20	
Aroclor 1016 [2C]	0.76	0.10	ug/L	1.000		76	40-140	0.6	20	
Aroclor 1260	0.95	0.10	ug/L	1.000		95	40-140	4	20	
Aroclor 1260 [2C]	0.90	0.10	ug/L	1.000		90	40-140	5	20	
Surrogate: Decachlorobiphenyl	*0.0477*		ug/L	*0.05000*		*95*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0430*		ug/L	*0.05000*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0381*		ug/L	*0.05000*		*76*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0360*		ug/L	*0.05000*		*72*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CB81322 - 3520C										
Blank										
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*83.3*		ug/L	*100.0*		*83*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*148*		ug/L	*150.0*		*99*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*119*		ug/L	*150.0*		*80*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*92.0*		ug/L	*100.0*		*92*	*30-130*			
Surrogate: 2-Fluorophenol	*100*		ug/L	*150.0*		*67*	*15-110*			
Surrogate: Nitrobenzene-d5	*78.2*		ug/L	*100.0*		*78*	*30-130*			
Surrogate: Phenol-d6	*112*		ug/L	*150.0*		*75*	*15-110*			
Surrogate: p-Terphenyl-d14	*97.2*		ug/L	*100.0*		*97*	*30-130*			
LCS										
bis(2-Ethylhexyl)phthalate	82.4	6.0	ug/L	100.0		82	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*81.7*		ug/L	*100.0*		*82*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*163*		ug/L	*150.0*		*108*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*121*		ug/L	*150.0*		*81*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*90.8*		ug/L	*100.0*		*91*	*30-130*			
Surrogate: 2-Fluorophenol	*98.6*		ug/L	*150.0*		*66*	*15-110*			
Surrogate: Nitrobenzene-d5	*76.5*		ug/L	*100.0*		*77*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CB81322 - 3520C										
Surrogate: Phenol-d6	*113*		ug/L	*150.0*		*75*	*15-110*			
Surrogate: p-Terphenyl-d14	*99.8*		ug/L	*100.0*		*100*	*30-130*			
LCS Dup										
bis(2-Ethylhexyl)phthalate	87.2	6.0	ug/L	100.0		87	40-140	6	20	
Surrogate: 1,2-Dichlorobenzene-d4	*80.3*		ug/L	*100.0*		*80*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*163*		ug/L	*150.0*		*108*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*118*		ug/L	*150.0*		*79*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*89.3*		ug/L	*100.0*		*89*	*30-130*			
Surrogate: 2-Fluorophenol	*94.5*		ug/L	*150.0*		*63*	*15-110*			
Surrogate: Nitrobenzene-d5	*76.9*		ug/L	*100.0*		*77*	*30-130*			
Surrogate: Phenol-d6	*108*		ug/L	*150.0*		*72*	*15-110*			
Surrogate: p-Terphenyl-d14	*113*		ug/L	*100.0*		*113*	*30-130*			
Classical Chemistry										
Batch CB81541 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	32		mg/L	34.10		94	80-120			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB81502 - 3510C										
Blank										
C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	100	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							
Surrogate: 1-Chlorooctadecane	*38.6*		ug/L	*50.00*		*77*	*40-140*			
Blank										
2-Methylnaphthalene	ND	5.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB81502 - 3510C										
Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	*54.7*		ug/L	*50.00*		*109*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*48.5*		ug/L	*50.00*		*97*	*40-140*			
Surrogate: O-Terphenyl	*44.3*		ug/L	*50.00*		*89*	*40-140*			
LCS										
C19-C36 Aliphatics1	397	100	ug/L	400.0		99	40-140			
C9-C18 Aliphatics1	227	100	ug/L	300.0		76	40-140			
Decane (C10)	30	5	ug/L	50.00		61	40-140			
Docosane (C22)	49	5	ug/L	50.00		97	40-140			
Dodecane (C12)	36	5	ug/L	50.00		72	40-140			
Eicosane (C20)	48	5	ug/L	50.00		96	40-140			
Hexacosane (C26)	49	5	ug/L	50.00		99	40-140			
Hexadecane (C16)	45	5	ug/L	50.00		91	40-140			
Hexatriacontane (C36)	53	5	ug/L	50.00		105	40-140			
Nonadecane (C19)	48	5	ug/L	50.00		96	40-140			
Nonane (C9)	24	5	ug/L	50.00		49	30-140			
Octacosane (C28)	50	5	ug/L	50.00		101	40-140			
Octadecane (C18)	45	5	ug/L	50.00		91	40-140			
Tetracosane (C24)	49	5	ug/L	50.00		98	40-140			
Tetradecane (C14)	41	5	ug/L	50.00		82	40-140			
Triacontane (C30)	52	5	ug/L	50.00		104	40-140			
Surrogate: 1-Chlorooctadecane	*38.7*		ug/L	*50.00*		*77*	*40-140*			
LCS										
2-Methylnaphthalene	38.7	5.0	ug/L	50.00		77	40-140			
Acenaphthene	41.8	5.0	ug/L	50.00		84	40-140			
Acenaphthylene	42.8	5.0	ug/L	50.00		86	40-140			
Anthracene	43.1	5.0	ug/L	50.00		86	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB81502 - 3510C										
Benzo(a)anthracene	51.1	5.0	ug/L	50.00		102	40-140			
Benzo(a)pyrene	50.9	10.0	ug/L	50.00		102	40-140			
Benzo(b)fluoranthene	53.9	5.0	ug/L	50.00		108	40-140			
Benzo(g,h,i)perylene	29.2	10.0	ug/L	50.00		58	40-140			
Benzo(k)fluoranthene	55.3	10.0	ug/L	50.00		111	40-140			
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	731	100	ug/L	850.0		86	40-140			
Chrysene	50.8	10.0	ug/L	50.00		102	40-140			
Dibenzo(a,h)Anthracene	36.2	5.0	ug/L	50.00		72	40-140			
Fluoranthene	44.2	10.0	ug/L	50.00		88	40-140			
Fluorene	41.3	5.0	ug/L	50.00		83	40-140			
Indeno(1,2,3-cd)Pyrene	36.4	5.0	ug/L	50.00		73	40-140			
Naphthalene	39.5	10.0	ug/L	50.00		79	40-140			
Phenanthrene	44.1	5.0	ug/L	50.00		88	40-140			
Pyrene	44.9	5.0	ug/L	50.00		90	40-140			
Surrogate: 2-Bromonaphthalene	*47.4*		ug/L	*50.00*		*95*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*46.6*		ug/L	*50.00*		*93*	*40-140*			
Surrogate: O-Terphenyl	*42.0*		ug/L	*50.00*		*84*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	412	100	ug/L	400.0		103	40-140	4	25	
C9-C18 Aliphatics1	236	100	ug/L	300.0		79	40-140	4	25	
Decane (C10)	31	5	ug/L	50.00		63	40-140	4	25	
Docosane (C22)	50	5	ug/L	50.00		100	40-140	3	25	
Dodecane (C12)	37	5	ug/L	50.00		74	40-140	3	25	
Eicosane (C20)	50	5	ug/L	50.00		99	40-140	3	25	
Hexacosane (C26)	51	5	ug/L	50.00		102	40-140	3	25	
Hexadecane (C16)	47	5	ug/L	50.00		95	40-140	4	25	
Hexatriacontane (C36)	54	5	ug/L	50.00		108	40-140	3	25	
Nonadecane (C19)	50	5	ug/L	50.00		100	40-140	4	25	
Nonane (C9)	26	5	ug/L	50.00		51	30-140	5	25	
Octacosane (C28)	52	5	ug/L	50.00		104	40-140	3	25	
Octadecane (C18)	47	5	ug/L	50.00		95	40-140	4	25	
Tetracosane (C24)	51	5	ug/L	50.00		101	40-140	3	25	
Tetradecane (C14)	43	5	ug/L	50.00		86	40-140	5	25	
Triacontane (C30)	53	5	ug/L	50.00		107	40-140	3	25	
Surrogate: 1-Chlorooctadecane	*37.0*		ug/L	*50.00*		*74*	*40-140*			
LCS Dup										
2-Methylnaphthalene	42.6	5.0	ug/L	50.00		85	40-140	9	20	
Acenaphthene	46.8	5.0	ug/L	50.00		94	40-140	11	20	
Acenaphthylene	48.2	5.0	ug/L	50.00		96	40-140	12	20	
Anthracene	47.2	5.0	ug/L	50.00		94	40-140	9	20	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB81502 - 3510C										
Benzo(a)anthracene	56.0	5.0	ug/L	50.00		112	40-140	9	20	
Benzo(a)pyrene	56.4	10.0	ug/L	50.00		113	40-140	10	20	
Benzo(b)fluoranthene	61.6	5.0	ug/L	50.00		123	40-140	13	20	
Benzo(g,h,i)perylene	31.5	10.0	ug/L	50.00		63	40-140	8	20	
Benzo(k)fluoranthene	59.9	10.0	ug/L	50.00		120	40-140	8	20	
C11-C22 Aromatics1,2	ND	100	ug/L wet							
C11-C22 Unadjusted Aromatics1	809	100	ug/L	850.0		95	40-140	10	25	
Chrysene	55.8	10.0	ug/L	50.00		112	40-140	9	20	
Dibenzo(a,h)Anthracene	39.0	5.0	ug/L	50.00		78	40-140	8	20	
Fluoranthene	48.6	10.0	ug/L	50.00		97	40-140	9	20	
Fluorene	47.5	5.0	ug/L	50.00		95	40-140	14	20	
Indeno(1,2,3-cd)Pyrene	38.8	5.0	ug/L	50.00		78	40-140	7	20	
Naphthalene	44.9	10.0	ug/L	50.00		90	40-140	13	20	
Phenanthrene	47.6	5.0	ug/L	50.00		95	40-140	8	20	
Pyrene	49.8	5.0	ug/L	50.00		100	40-140	10	20	
Surrogate: 2-Bromonaphthalene	*53.7*		ug/L	*50.00*		*107*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*49.8*		ug/L	*50.00*		*100*	*40-140*			
Surrogate: O-Terphenyl	*44.4*		ug/L	*50.00*		*89*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1802262

Notes and Definitions

Z16a	Aqueous pH measured in water at 15.6 ºC.
Z16	Aqueous pH measured in water at 15.5 ºC.
Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
EL	Elevated Method Reporting Limits due to sample matrix (EL).
D	Diluted.
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1802262
Date Received: 2/14/2018
Project Due Date: 2/21/2018
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.5 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	201949	Yes	NA	Yes	1L Amber - HCl	HCl	
01	201950	Yes	NA	Yes	1L Amber - HCl	HCl	
01	201955	Yes	NA	Yes	1L Amber - Unpres	NP	
01	201956	Yes	NA	Yes	1L Amber - Unpres	NP	
01	201957	Yes	NA	Yes	1L Amber - Unpres	NP	
01	201958	Yes	NA	Yes	1L Amber - Unpres	NP	
01	201960	Yes	NA	Yes	1L Poly - Unpres	NP	
01	201962	Yes	NA	Yes	250 mL Poly - Unpres	NP	
02	201947	Yes	NA	Yes	1L Amber - HCl	HCl	
02	201948	Yes	NA	Yes	1L Amber - HCl	HCl	
02	201951	Yes	NA	Yes	1L Amber - Unpres	NP	
02	201952	Yes	NA	Yes	1L Amber - Unpres	NP	
02	201953	Yes	NA	Yes	1L Amber - Unpres	NP	
02	201954	Yes	NA	Yes	1L Amber - Unpres	NP	
02	201959	Yes	NA	Yes	1L Poly - Unpres	NP	
02	201961	Yes	NA	Yes	250 mL Poly - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 2/14/18 1722
Reviewed

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1802262

Date Received: 2/14/2018

By: [signature]

Date & Time: 2/14/18 1816

Delivered By: [signature]

2/14/18 1816

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab #	1802262
Turn Time	(5-Day) Rush
Regulatory State	
Reporting Limits	NRWQC(SW)
Is this project for any of the following?:	○ CT RCP ○ MA MCP ○ RGP
Electonic Deliverables	☐ Limit Checker ☑ Standard Excel ☐ Other (Please Specify →)

Company Name	Project #	Project Name
SPS New England/ Charter Contracting Co, LLC	454	Wynn Dredging

Contact Person	Address
Katherine Mason	98 Elm St

City	State	Zip Code	PO #
Salisbury	MA	01952	

Telephone Number	FAX Number	Email Address
617-608-7317		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Dissolved Metals (Arsenic, Lead, Mercury, Vanadium)	TSS/pH	EPH	PCBs	sVOCs (2-ethylhexyl phthalate)
1 01	2/14/18	09:45	Grab	Aqueous	171101-Wynn-CC-Influent-1				2	2
1 02	2/14/18	09:45	Grab	Aqueous	171101-Wynn-CC-Influent-2	1				
1 03	2/14/18	09:45	Grab	Aqueous	171101-Wynn-CC-Influent-3			2		
1 04	2/14/18	09:45	Grab	Aqueous	171101-Wynn-CC-Influent-4		1			
2 05	2/14/18	09:15	Grab	Aqueous	171101-Wynn-CC-Effluent-1				2	2
2 06	2/14/18	09:15	Grab	Aqueous	171101-Wynn-CC-Effluent-2	1				
2 07	2/14/18	09:15	Grab	Aqueous	171101-Wynn-CC-Effluent-3			2		
2 08	2/14/18	09:15	Grab	Aqueous	171101-Wynn-CC-Effluent-4		1			
Container Type:	AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial					P	P	AG	AG	AG
Container Volume:	1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*					3	6	6	6	6
Preservation Code:	1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*					1	1	2	1	1
					Number of Containers per Sample:	2	2	4	4	4

Laboratory Use Only

Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 1.5

Sampled by : Monica DeCicco

Comments: **Please specify "Other" preservative and containers types in this space**

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
2/14/18 13:51	2/14/18 13:51	2/14/18 16:46	2/14/18 17:14
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**

APPENDIX H

Sediment Pre-Characterization Data

Laboratory Sample Designation		20X	1709279-01		1709279-02		1709279-03		1709279-04		1709279-06		1709279-07		1709279-08		1709279-09		1709279-10		1709279-11	
Sample Designation			SED-C-20 (0-2_3')		SED-C-48 (0-3_2')		SED-C-25 (0-3_3')		SED-C-23 (0-1_9')		SED-C-22 (0-1_2')		SED-C-13 (0-2_9')		SED-C-19 (0-3_0')		SED-C-DUP1		SED-C-28 (0-2_7')		SED-C-21 (0-2_6')	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
VOCs - Low																						
1,1,1,2-Tetrachloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	4000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-01		1709279-02		1709279-03		1709279-04		1709279-06		1709279-07		1709279-08		1709279-09		1709279-10		1709279-11	
Sample Designation			SED-C-20 (0-2_3')		SED-C-48 (0-3_2')		SED-C-25 (0-3_3')		SED-C-23 (0-1_9')		SED-C-22 (0-1_2')		SED-C-13 (0-2_9')		SED-C-19 (0-3_0')		SED-C-DUP1		SED-C-28 (0-2_7')		SED-C-21 (0-2_6')	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
Dichlorodifluoromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylenes (Total)	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																						
1,2,4-Trichlorobenzene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
1,2-Dichlorobenzene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
1,3-Dichlorobenzene	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
1,4-Dichlorobenzene	mg/kg	150	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
2,4,5-Trichlorophenol	mg/kg	8000	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
2,4,6-Trichlorophenol	mg/kg	40	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
2,4-Dichlorophenol	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
2,4-Dimethylphenol	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
2,4-Dinitrophenol	mg/kg	NE	1.10	U	1.96	U	1.55	U	1.25	U	0.953	U	1.69	U	2.03	U	2.17	U	2.26	U	1.67	U
2,4-Dinitrotoluene	mg/kg	2.6	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
2,6-Dinitrotoluene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
2-Chloronaphthalene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
2-Chlorophenol	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
2-Methylnaphthalene	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
2-Methylphenol	mg/kg	4000	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
2-Nitrophenol	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
3,3´-Dichlorobenzidine	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
3+4-Methylphenol	mg/kg	4000	1.10	U	1.96	U	1.55	U	1.25	U	0.953	U	1.69	U	2.03	U	2.17	U	2.26	U	1.67	U

Laboratory Sample Designation		20X	1709279-01		1709279-02		1709279-03		1709279-04		1709279-06		1709279-07		1709279-08		1709279-09		1709279-10		1709279-11	
Sample Designation			SED-C-20 (0-2_3')		SED-C-48 (0-3_2')		SED-C-25 (0-3_3')		SED-C-23 (0-1_9')		SED-C-22 (0-1_2')		SED-C-13 (0-2_9')		SED-C-19 (0-3_0')		SED-C-DUP1		SED-C-28 (0-2_7')		SED-C-21 (0-2_6')	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
4-Bromophenyl-phenylether	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
4-Chloroaniline	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
4-Nitrophenol	mg/kg	NE	2.75	U	4.91	U	3.87	U	3.13	U	2.39	U	4.24	U	5.08	U	5.44	U	5.65	U	4.18	U
Acenaphthene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Acenaphthylene	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
Acetophenone	mg/kg	NE	1.10	U	1.96	U	1.55	U	1.25	U	0.953	U	1.69	U	2.03	U	2.17	U	2.26	U	1.67	U
Aniline	mg/kg	NE	2.75	U	4.91	U	3.87	U	3.13	U	2.39	U	4.24	U	5.08	U	5.44	U	5.65	U	4.18	U
Anthracene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Azobenzene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Benzo(a)anthracene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.811	-	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Benzo(a)pyrene	mg/kg	NE	0.275	U	0.491	U	0.416	-	0.512	-	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.607	-
Benzo(b)fluoranthene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Benzo(g,h,i)perylene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Benzo(k)fluoranthene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
bis(2-Chloroethoxy)methane	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
bis(2-Chloroethyl)ether	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
bis(2-chloroisopropyl)Ether	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
bis(2-Ethylhexyl)phthalate	mg/kg	NE	0.549	U	28.5	D	7.43	-	**183**	D	0.476	U	**216**	D	**521**	D	**599**	D	**185**	D	6.26	-
Butylbenzylphthalate	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Chrysene	mg/kg	NE	0.275	U	0.491	U	0.463	-	0.919	-	0.239	U	0.424	U	0.565	-	0.544	U	0.568	-	0.606	-
Dibenzo(a,h)Anthracene	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
Dibenzofuran	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Diethylphthalate	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Dimethylphthalate	mg/kg	NE	0.549	U	**0.979**	U	**0.771**	U	0.623	U	0.476	U	**0.846**	U	**1.01**	U	**1.09**	U	**1.13**	U	**0.833**	U
Di-n-butylphthalate	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Di-n-octylphthalate	mg/kg	NE	0.549	U	0.979	U	0.771	U	18.2	D	0.476	U	12.8	-	57.1	D	72.9	D	7.88	-	0.833	U
Fluoranthene	mg/kg	NE	0.549	U	0.979	U	0.79	-	2.23	-	0.476	U	0.846	U	1.46	-	1.09	U	1.13	U	0.96	-
Fluorene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.647	-	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Hexachlorobenzene	mg/kg	2.6	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
Hexachlorobutadiene	mg/kg	10	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Hexachloroethane	mg/kg	60	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
Indeno(1,2,3-cd)Pyrene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Isophorone	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Naphthalene	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Nitrobenzene	mg/kg	40	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
N-Nitrosodimethylamine	mg/kg	NE	0.549	U	0.979	U	0.771	U	0.623	U	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Pentachlorophenol	mg/kg	2000	1.10	U	1.96	U	1.55	U	1.25	U	0.953	U	1.69	U	2.03	U	2.17	U	2.26	U	1.67	U
Phenanthrene	mg/kg	NE	0.549	U	0.979	U	0.771	U	2.4	-	0.476	U	0.846	U	1.01	U	1.09	U	1.13	U	0.833	U
Phenol	mg/kg	NE	0.275	U	0.491	U	0.387	U	0.313	U	0.239	U	0.424	U	0.508	U	0.544	U	0.565	U	0.418	U
Pyrene	mg/kg	NE	0.549	U	0.979	U	0.771	U	1.76	-	0.476	U	0.846	U	1.04	-	1.09	U	1.13	U	0.927	-
Pyridine	mg/kg	100	2.75	U	4.91	U	3.87	U	3.13	U	2.39	U	4.24	U	5.08	U	5.44	U	5.65	U	4.18	U
Total Metals																						
Arsenic	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-01		1709279-02		1709279-03		1709279-04		1709279-06		1709279-07		1709279-08		1709279-09		1709279-10		1709279-11	
Sample Designation			SED-C-20 (0-2_3')		SED-C-48 (0-3_2')		SED-C-25 (0-3_3')		SED-C-23 (0-1_9')		SED-C-22 (0-1_2')		SED-C-13 (0-2_9')		SED-C-19 (0-3_0')		SED-C-DUP1		SED-C-28 (0-2_7')		SED-C-21 (0-2_6')	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
Lead	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	**20**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																						
4,4´-DDD	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0426	-	0.0035	U	0.0305	-	0.0218	LC, P	0.0367	-	0.0105	LC, P	0.0092	-
4,4´-DDE	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0093	LC, P	0.0060	U
4,4´-DDT	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Aldrin	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
alpha-BHC	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
alpha-Chlordane	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
beta-BHC	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Chlordane (Total)	mg/kg	0.6	0.0322	U	0.0582	U	0.0466	U	0.0371	U	0.0283	U	0.0529	U	0.0819	U	0.0873	U	0.0690	U	0.0483	U
delta-BHC	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Dieldrin	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0231	-	0.017	LC, P	0.0138	LC, P	0.0086	U	0.0060	U
Endosulfan I	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0174	-	0.0109	U	0.0086	U	0.0060	U
Endosulfan II	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Endosulfan Sulfate	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Endrin	mg/kg	0.4	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Endrin Ketone	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
gamma-BHC (Lindane)	mg/kg	8	0.0008	U	0.0015	U	0.0012	U	0.0009	U	0.0007	U	0.0013	U	0.0020	U	0.0022	U	0.0017	U	0.0012	U
gamma-Chlordane	mg/kg	NE	0.0040	U	0.0073	U	0.0058	U	0.0048	LC, P	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Heptachlor	mg/kg	0.16	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Heptachlor Epoxide	mg/kg	0.16	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Hexachlorobenzene	mg/kg	2.6	0.0057	LC, P	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0066	U	0.0102	U	0.0109	U	0.0086	U	0.0060	U
Methoxychlor	mg/kg	200	0.0040	U	0.0073	U	0.0058	U	0.0046	U	0.0035	U	0.0151	LC, P	0.0102	U	0.0194	LC, P	0.0086	U	0.0060	U
Toxaphene	mg/kg	10	0.201	U	0.364	U	0.291	U	0.232	U	0.177	U	0.330	U	0.512	U	0.546	U	0.431	U	0.302	U
PCBs																						
Aroclor 1016	mg/kg	NE	0.08	U	0.1	U	0.1	U	0.09	U	0.07	U	0.1	U	0.2	U	0.2	U	0.2	U	0.1	U
Aroclor 1221	mg/kg	NE	0.08	U	0.1	U	0.1	U	0.09	U	0.07	U	0.1	U	0.2	U	0.2	U	0.2	U	0.1	U
Aroclor 1232	mg/kg	NE	0.08	U	0.1	U	0.1	U	0.09	U	0.07	U	0.1	U	0.2	U	0.2	U	0.2	U	0.1	U
Aroclor 1242	mg/kg	NE	0.08	U	0.4	-	0.9	-	0.2	-	0.07	U	**2.6**	-	**2.6**	P	**1.6**	-	**3.7**	D	0.9	-
Aroclor 1248	mg/kg	NE	0.08	U	0.1	U	0.1	U	0.09	U	0.07	U	0.1	U	0.2	U	0.2	U	0.2	U	0.1	U
Aroclor 1254	mg/kg	NE	0.08	U	0.7	-	**1.5**	-	0.5	-	0.1	-	**2.4**	-	**2.7**	-	**1.7**	-	**4.7**	D	**1.3**	-
Aroclor 1260	mg/kg	NE	0.08	U	0.2	-	0.4	P	0.2	-	0.07	U	0.6	-	0.7	P	0.4	-	**1.1**	D	0.3	-
Aroclor 1262	mg/kg	NE	0.08	U	0.1	U	0.1	U	0.09	U	0.07	U	0.1	U	0.2	U	0.2	U	0.2	U	0.1	U
Aroclor 1268	mg/kg	NE	0.08	U	0.1	U	0.1	U	0.09	U	0.07	U	0.1	U	0.2	U	0.2	U	0.2	U	0.1	U
Herbicides																						
2,4,5-T	mg/kg	NE	0.029	U	0.056	U	0.205	U, D	0.314	U, D	0.024	U	0.047	U	0.078	U	0.083	U	0.093	LC, P	0.152	LC, P
2,4,5-TP (Silvex)	mg/kg	20	0.029	U	0.056	U	0.205	U, D	4.02	D	0.024	U	0.047	U	0.078	U	0.083	U	0.184	LC, P	0.048	U
2,4-D	mg/kg	200	0.144	U	0.276	U	1.02	U, D	8.64	LC, P, D	0.117	U	0.234	U	0.385	U	0.412	U	0.297	-	0.235	U
2,4-DB	mg/kg	NE	0.145	U	0.279	U	1.03	U, D	1.57	U, D	0.118	U	0.237	U	0.389	U	0.417	U	0.298	U	0.238	U
Dalapon	mg/kg	NE	0.139	U	0.268	U	0.984	U, D	1.95	LC, P, D	0.113	U	0.227	U	0.373	U	0.399	U	0.514	-	0.544	-
Dicamba	mg/kg	NE	0.029	U	0.354	LC, P	0.39	LC, P, D	0.311	U, D	0.023	U	0.047	U	0.077	U	0.082	U	0.29	LC, P	0.335	LC, P

Laboratory Sample Designation		20X	1709279-01		1709279-02		1709279-03		1709279-04		1709279-06		1709279-07		1709279-08		1709279-09		1709279-10		1709279-11	
Sample Designation			SED-C-20 (0-2_3')		SED-C-48 (0-3_2')		SED-C-25 (0-3_3')		SED-C-23 (0-1_9')		SED-C-22 (0-1_2')		SED-C-13 (0-2_9')		SED-C-19 (0-3_0')		SED-C-DUP1		SED-C-28 (0-2_7')		SED-C-21 (0-2_6')	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
Dichlorprop	mg/kg	NE	0.144	U	0.276	U	1.02	U, D	93.4	D	0.117	U	0.234	U	0.385	U	0.412	U	0.333	LC, P	0.401	LC, P
Dinoseb	mg/kg	NE	0.145	U	0.279	U	1.03	U, D	1.57	U, D	0.118	U	0.237	U	0.389	U	0.417	U	0.298	U	0.238	U
MCPA	mg/kg	NE	7.10	U	13.7	U	50.3	U, D	76.9	U	5.77	U	11.6	U	19.0	U	20.4	U	14.6	U	11.6	U
MCPP	mg/kg	NE	7.18	U	13.8	U	50.8	U	36300	D	5.83	U	11.7	U	19.2	U	20.6	U	14.7	U	11.8	U
Classical Chemistry																						
Corrosivity (pH)	S.U.	NE	8.3	-	7.37	-	8.12	-	7.74	-	8.19	-	7.06	-	7.45	-	7.53	-	7.19	-	8.1	-
Flashpoint	°F	NE	200	>	200	>	200	>	200	>	200	>	200	>	200	>	200	>	200	>	200	>
Percent Moisture	%	NE	39	-	66	-	58	-	47	-	30	-	62	-	76	-	77	-	71	-	60	-
Reactive Cyanide	mg/kg	NE	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Reactive Sulfide	mg/kg	NE	2.0	U	47.5	-	272	-	16.1	-	19.9	-	2.0	U	4.4	-	2.0	U	5.7	-	222	-
TCLP Metals																						
Arsenic	mg/L	5	0.071	-	0.079	-	0.050	U	0.094	-	0.084	-	0.079	-	0.050	U	0.05	-	0.052	-	0.050	U
Barium	mg/L	100	0.098	-	0.093	-	0.122	-	0.153	-	0.073	-	0.050	U	0.08	-	0.073	-	0.050	U	0.067	-
Cadmium	mg/L	NE	0.0100	U	0.0100	U	0.0100	U	0.0100	U	0.0100	U	0.0100	U	0.0100	U	0.0100	U	0.0100	U	0.0100	U
Chromium	mg/L	NE	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
Lead	mg/L	5	0.106	-	0.147	-	0.050	U	0.312	-	0.258	-	0.081	-	0.050	U	0.050	U	0.050	U	0.050	U
Mercury	mg/L	NE	0.00050	U	0.00050	U	0.00050	U	0.00050	U	0.00050	U	0.00050	U	0.00050	U	0.00050	U	0.00050	U	0.00050	U
Selenium	mg/L	NE	0.100	U	0.050	U	0.100	U	0.050	U	0.050	U	0.050	U	0.100	U	0.100	U	0.050	U	0.100	U
Silver	mg/L	NE	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U

Laboratory Sample Designation		20X	1709279-12		1709279-15		1709279-17		1709279-18		1709279-19		1709279-20		1709279-21		1709279-22	
Sample Designation			SED-C-18 (0-1_0')		SED-C-24 (0_-2_9')		SED-C-17 (0-3_0')		SED-G-17 (2_4-3_0')		Trip Blank - 1		SED-C-20 (0-2_3') - Dried		SED-C-48 (0-3_2') - Dried		SED-C-25 (0-3_3') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
VOCs - Low																		
1,1,1,2-Tetrachloroethane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	NE	---	---	---	---	---	---	0.0022	U	0.0020	U	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	14	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	10	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	150	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
1,4-Dioxane	mg/kg	NE	---	---	---	---	---	---	0.112	U	0.100	U	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
2-Butanone	mg/kg	4000	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
2-Hexanone	mg/kg	NE	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	NE	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
Acetone	mg/kg	NE	---	---	---	---	---	---	0.0156	-	0.0100	U	---	---	---	---	---	---
Benzene	mg/kg	10	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Bromobenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Bromochloromethane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Bromodichloromethane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Bromoform	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Bromomethane	mg/kg	NE	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
Carbon Disulfide	mg/kg	NE	---	---	---	---	---	---	0.0062	-	0.0050	U	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	10	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Chlorobenzene	mg/kg	2000	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Chloroethane	mg/kg	NE	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
Chloroform	mg/kg	120	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Chloromethane	mg/kg	NE	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Dibromochloromethane	mg/kg	NE	---	---	---	---	---	---	0.0022	U	0.0020	U	---	---	---	---	---	---
Dibromomethane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-12		1709279-15		1709279-17		1709279-18		1709279-19		1709279-20		1709279-21		1709279-22	
Sample Designation			SED-C-18 (0-1_0')		SED-C-24 (0_-2_9')		SED-C-17 (0-3_0')		SED-G-17 (2_4-3_0')		Trip Blank - 1		SED-C-20 (0-2_3') - Dried		SED-C-48 (0-3_2') - Dried		SED-C-25 (0-3_3') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
Dichlorodifluoromethane	mg/kg	NE	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
Diethyl Ether	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Ethylbenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	10	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Isopropylbenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Methylene Chloride	mg/kg	NE	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
Naphthalene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
n-Butylbenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
n-Propylbenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Styrene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Tetrachloroethene	mg/kg	14	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Toluene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Trichloroethene	mg/kg	10	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Vinyl Chloride	mg/kg	4	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
Xylene O	mg/kg	NE	---	---	---	---	---	---	0.0056	U	0.0050	U	---	---	---	---	---	---
Xylene P,M	mg/kg	NE	---	---	---	---	---	---	0.0112	U	0.0100	U	---	---	---	---	---	---
Xylenes (Total)	mg/kg	NE	---	---	---	---	---	---	0.0112	U	0.0075	U	---	---	---	---	---	---
SVOCs																		
1,2,4-Trichlorobenzene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	150	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	8000	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	40	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	NE	1.01	U	1.59	U	1.04	U	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	2.6	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	4000	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	4000	1.01	U	1.59	U	1.04	U	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-12		1709279-15		1709279-17		1709279-18		1709279-19		1709279-20		1709279-21		1709279-22	
Sample Designation			SED-C-18 (0-1_0')		SED-C-24 (0_-2_9')		SED-C-17 (0-3_0')		SED-G-17 (2_4-3_0')		Trip Blank - 1		SED-C-20 (0-2_3') - Dried		SED-C-48 (0-3_2') - Dried		SED-C-25 (0-3_3') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
4-Bromophenyl-phenylether	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	NE	2.54	U	3.99	U	2.61	U	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	NE	1.01	U	1.59	U	1.04	U	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	NE	2.54	U	3.99	U	2.61	U	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	NE	0.719	-	1.12	-	0.852	-	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	NE	0.572	-	1.19	-	0.657	-	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	NE	0.506	U	1.55	-	0.519	U	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	NE	0.506	U	1.16	-	0.519	U	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	NE	0.506	U	51.7	D	0.519	U	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	NE	0.886	-	1.45	-	0.897	-	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	NE	0.506	U	**0.796**	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	NE	1.64	-	2.52	-	1.4	-	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	2.6	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	10	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	60	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	40	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	NE	0.506	U	0.796	U	0.519	U	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	2000	1.01	U	1.59	U	1.04	U	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	NE	0.506	U	0.88	-	0.519	U	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	NE	0.254	U	0.399	U	0.261	U	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	NE	1.45	-	1.96	-	1.32	-	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	100	2.54	U	3.99	U	2.61	U	---	---	---	---	---	---	---	---	---	---
Total Metals																		
Arsenic	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	8.76	-	**77.7**	D	**76.6**	-
Barium	mg/kg	2000	---	---	---	---	---	---	---	---	---	---	22.6	-	68.5	D	66.3	-
Cadmium	mg/kg	20	---	---	---	---	---	---	---	---	---	---	0.48	U	2.22	D	0.7	-
Chromium	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	22.3	-	**115**	D	82.2	-

Laboratory Sample Designation		20X	1709279-12		1709279-15		1709279-17		1709279-18		1709279-19		1709279-20		1709279-21		1709279-22	
Sample Designation			SED-C-18 (0-1_0')		SED-C-24 (0_-2_9')		SED-C-17 (0-3_0')		SED-G-17 (2_4-3_0')		Trip Blank - 1		SED-C-20 (0-2_3') - Dried		SED-C-48 (0-3_2') - Dried		SED-C-25 (0-3_3') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
Lead	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	16.8	-	**334**	D	**389**	-
Mercury	mg/kg	**4**	---	---	---	---	---	---	---	---	---	---	0.113	-	1.47	D	1.37	D
Selenium	mg/kg	**20**	---	---	---	---	---	---	---	---	---	---	1.26	D	3.71	D	6.14	D
Silver	mg/kg	100	---	---	---	---	---	---	---	---	---	---	0.48	U	1.97	D	1.53	-
Pesticides																		
4,4´-DDD	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	0.6	0.0304	U	0.0494	U	0.0329	U	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	0.4	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	8	0.0008	U	0.0012	U	0.0008	U	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	NE	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	0.16	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	0.16	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	2.6	0.0038	U	0.0086	LC, P	0.0041	U	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	200	0.0038	U	0.0062	U	0.0041	U	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	10	0.190	U	0.309	U	0.205	U	---	---	---	---	---	---	---	---	---	---
PCBs																		
Aroclor 1016	mg/kg	NE	0.08	U	0.1	U	0.08	U	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	NE	0.08	U	0.1	U	0.08	U	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	NE	0.08	U	0.1	U	0.08	U	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	NE	0.08	U	0.8	-	0.08	U	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	NE	0.08	U	0.1	U	0.08	U	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	NE	0.08	U	**1.9**	-	0.08	U	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	NE	0.08	U	0.6	-	0.08	U	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	NE	0.08	U	0.1	U	0.08	U	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	NE	0.08	U	0.1	U	0.08	U	---	---	---	---	---	---	---	---	---	---
Herbicides																		
2,4,5-T	mg/kg	NE	0.290	U, D	0.044	U	0.027	U	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	20	0.290	U, D	0.236	-	0.027	U	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	200	1.44	U, D	0.219	U	0.133	U	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	NE	1.45	U, D	0.221	U	0.135	U	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	NE	1.39	U, D	0.212	U	0.341	LC, P	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	NE	0.287	U, D	0.212	LC, P	0.173	LC, P	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-12		1709279-15		1709279-17		1709279-18		1709279-19		1709279-20		1709279-21		1709279-22	
Sample Designation			SED-C-18 (0-1_0')		SED-C-24 (0_-2_9')		SED-C-17 (0-3_0')		SED-G-17 (2_4-3_0')		Trip Blank - 1		SED-C-20 (0-2_3') - Dried		SED-C-48 (0-3_2') - Dried		SED-C-25 (0-3_3') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
Dichlorprop	mg/kg	NE	2.02	LC, P, D	0.442	LC, P	0.765	LC, P	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	NE	1.45	U, D	0.221	U	0.135	U	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	NE	71.1	U, D	10.8	U	6.59	U	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	NE	71.8	U	11.0	U	6.66	U	---	---	---	---	---	---	---	---	---	---
Classical Chemistry																		
Corrosivity (pH)	S.U.	NE	7.57	-	7.6	-	7.91	-	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	NE	200	>	200	>	200	>	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	NE	36	-	60	-	39	-	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	NE	2.0	U	2.0	U	2.0	U	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	NE	20.9	-	120	-	106	-	---	---	---	---	---	---	---	---	---	---
TCLP Metals																		
Arsenic	mg/L	5	0.224	-	0.058	-	0.192	-	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	100	0.105	-	0.055	-	0.089	-	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	NE	0.0100	U	0.0100	U	0.0100	U	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	NE	0.020	U	0.020	U	0.020	U	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	5	0.206	-	0.050	U	0.1	-	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	NE	0.00050	U	0.00050	U	0.00050	U	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	NE	0.050	U	0.050	U	0.050	U	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	NE	0.010	U	0.010	U	0.010	U	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-23		1709279-24		1709279-25		1709279-26		1709279-27		1709279-28		1709279-29	
Sample Designation			SED-C-23 (0-1_9') - Dried		SED-C-22 (0-1_2') - Dried		SED-C-13 (0-2_9') - Dried		SED-C-19 (0-3_0') - Dried		SED-C-DUP1 - Dried		SED-C28 (0-2_7') - Dried		SED-C-21 (0-2_6') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
VOCs - Low																
1,1,1,2-Tetrachloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	4000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-23		1709279-24		1709279-25		1709279-26		1709279-27		1709279-28		1709279-29	
Sample Designation			SED-C-23 (0-1_9') - Dried		SED-C-22 (0-1_2') - Dried		SED-C-13 (0-2_9') - Dried		SED-C-19 (0-3_0') - Dried		SED-C-DUP1 - Dried		SED-C28 (0-2_7') - Dried		SED-C-21 (0-2_6') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
Dichlorodifluoromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylenes (Total)	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																
1,2,4-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	8000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	40	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	2.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	4000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	4000	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-23		1709279-24		1709279-25		1709279-26		1709279-27		1709279-28		1709279-29	
Sample Designation			SED-C-23 (0-1_9') - Dried		SED-C-22 (0-1_2') - Dried		SED-C-13 (0-2_9') - Dried		SED-C-19 (0-3_0') - Dried		SED-C-DUP1 - Dried		SED-C28 (0-2_7') - Dried		SED-C-21 (0-2_6') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
4-Bromophenyl-phenylether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	2.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	60	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	40	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Metals																
Arsenic	mg/kg	**100**	**69.4**	-	**32.3**	-	**88.6**	-	**92.7**	-	**109**	-	**72.9**	-	**68.7**	-
Barium	mg/kg	2000	58.5	-	26.4	-	52.5	-	59.6	-	61	-	59.9	-	56.1	-
Cadmium	mg/kg	20	1.42	-	0.47	U	0.92	-	1.02	-	1.08	-	0.96	-	0.49	U
Chromium	mg/kg	**100**	49.6	-	22.3	-	86.6	-	**116**	-	**120**	-	**101**	-	77.1	-

Laboratory Sample Designation		20X	1709279-23		1709279-24		1709279-25		1709279-26		1709279-27		1709279-28		1709279-29	
Sample Designation			SED-C-23 (0-1_9') - Dried		SED-C-22 (0-1_2') - Dried		SED-C-13 (0-2_9') - Dried		SED-C-19 (0-3_0') - Dried		SED-C-DUP1 - Dried		SED-C28 (0-2_7') - Dried		SED-C-21 (0-2_6') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
Lead	mg/kg	**100**	**434**	-	97.3	-	**254**	-	**282**	-	**294**	-	**310**	-	**343**	-
Mercury	mg/kg	**4**	3.14	D	0.471	-	1.62	D	1.76	D	2.07	D	1.25	D	1.26	D
Selenium	mg/kg	**20**	**26.1**	D	3.13	D	8.04	D	3.46	D	3.69	D	3.62	D	5.36	D
Silver	mg/kg	100	1.27	-	0.47	U	1.23	-	2.13	-	2.44	-	1.72	-	1.5	-
Pesticides																
4,4´-DDD	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	0.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	0.16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	0.16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	2.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PCBs																
Aroclor 1016	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Herbicides																
2,4,5-T	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-23		1709279-24		1709279-25		1709279-26		1709279-27		1709279-28		1709279-29	
Sample Designation			SED-C-23 (0-1_9') - Dried		SED-C-22 (0-1_2') - Dried		SED-C-13 (0-2_9') - Dried		SED-C-19 (0-3_0') - Dried		SED-C-DUP1 - Dried		SED-C28 (0-2_7') - Dried		SED-C-21 (0-2_6') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017		09/12/2017	
Dichlorprop	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Classical Chemistry																
Corrosivity (pH)	S.U.	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TCLP Metals																
Arsenic	mg/L	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-30		1709279-31		1709279-32	
Sample Designation			SED-C-18 (0-1_0') - Dried		SED-C-24 (0_-2_9') - Dried		SED-C-17 (0-3_0') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017	
VOCs - Low								
1,1,1,2-Tetrachloroethane	mg/kg	NE	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	NE	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	NE	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	NE	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	NE	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	14	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	NE	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	NE	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	NE	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	NE	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	NE	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	10	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	NE	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	NE	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	NE	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	150	---	---	---	---	---	---
1,4-Dioxane	mg/kg	NE	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	NE	---	---	---	---	---	---
2-Butanone	mg/kg	4000	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	NE	---	---	---	---	---	---
2-Hexanone	mg/kg	NE	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	NE	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	NE	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	NE	---	---	---	---	---	---
Acetone	mg/kg	NE	---	---	---	---	---	---
Benzene	mg/kg	10	---	---	---	---	---	---
Bromobenzene	mg/kg	NE	---	---	---	---	---	---
Bromochloromethane	mg/kg	NE	---	---	---	---	---	---
Bromodichloromethane	mg/kg	NE	---	---	---	---	---	---
Bromoform	mg/kg	NE	---	---	---	---	---	---
Bromomethane	mg/kg	NE	---	---	---	---	---	---
Carbon Disulfide	mg/kg	NE	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	10	---	---	---	---	---	---
Chlorobenzene	mg/kg	2000	---	---	---	---	---	---
Chloroethane	mg/kg	NE	---	---	---	---	---	---
Chloroform	mg/kg	120	---	---	---	---	---	---
Chloromethane	mg/kg	NE	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	NE	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	NE	---	---	---	---	---	---
Dibromochloromethane	mg/kg	NE	---	---	---	---	---	---
Dibromomethane	mg/kg	NE	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-30		1709279-31		1709279-32	
Sample Designation			SED-C-18 (0-1_0') - Dried		SED-C-24 (0_-2_9') - Dried		SED-C-17 (0-3_0') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017	
Dichlorodifluoromethane	mg/kg	NE	---	---	---	---	---	---
Diethyl Ether	mg/kg	NE	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	NE	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	NE	---	---	---	---	---	---
Ethylbenzene	mg/kg	NE	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	10	---	---	---	---	---	---
Isopropylbenzene	mg/kg	NE	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	NE	---	---	---	---	---	---
Methylene Chloride	mg/kg	NE	---	---	---	---	---	---
Naphthalene	mg/kg	NE	---	---	---	---	---	---
n-Butylbenzene	mg/kg	NE	---	---	---	---	---	---
n-Propylbenzene	mg/kg	NE	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	NE	---	---	---	---	---	---
Styrene	mg/kg	NE	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	NE	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	NE	---	---	---	---	---	---
Tetrachloroethene	mg/kg	14	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	NE	---	---	---	---	---	---
Toluene	mg/kg	NE	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	NE	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	NE	---	---	---	---	---	---
Trichloroethene	mg/kg	10	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	NE	---	---	---	---	---	---
Vinyl Chloride	mg/kg	4	---	---	---	---	---	---
Xylene O	mg/kg	NE	---	---	---	---	---	---
Xylene P,M	mg/kg	NE	---	---	---	---	---	---
Xylenes (Total)	mg/kg	NE	---	---	---	---	---	---
SVOCs								
1,2,4-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	150	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	8000	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	40	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	NE	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	NE	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	NE	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	2.6	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	NE	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	NE	---	---	---	---	---	---
2-Chlorophenol	mg/kg	NE	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	NE	---	---	---	---	---	---
2-Methylphenol	mg/kg	4000	---	---	---	---	---	---
2-Nitrophenol	mg/kg	NE	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	NE	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	4000	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-30		1709279-31		1709279-32	
Sample Designation			SED-C-18 (0-1_0') - Dried		SED-C-24 (0_-2_9') - Dried		SED-C-17 (0-3_0') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017	
4-Bromophenyl-phenylether	mg/kg	NE	---	---	---	---	---	---
4-Chloroaniline	mg/kg	NE	---	---	---	---	---	---
4-Nitrophenol	mg/kg	NE	---	---	---	---	---	---
Acenaphthene	mg/kg	NE	---	---	---	---	---	---
Acenaphthylene	mg/kg	NE	---	---	---	---	---	---
Acetophenone	mg/kg	NE	---	---	---	---	---	---
Aniline	mg/kg	NE	---	---	---	---	---	---
Anthracene	mg/kg	NE	---	---	---	---	---	---
Azobenzene	mg/kg	NE	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	NE	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	NE	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	NE	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	NE	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	NE	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	NE	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	NE	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	NE	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	NE	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	NE	---	---	---	---	---	---
Chrysene	mg/kg	NE	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	NE	---	---	---	---	---	---
Dibenzofuran	mg/kg	NE	---	---	---	---	---	---
Diethylphthalate	mg/kg	NE	---	---	---	---	---	---
Dimethylphthalate	mg/kg	NE	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	NE	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	NE	---	---	---	---	---	---
Fluoranthene	mg/kg	NE	---	---	---	---	---	---
Fluorene	mg/kg	NE	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	2.6	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	10	---	---	---	---	---	---
Hexachloroethane	mg/kg	60	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	NE	---	---	---	---	---	---
Isophorone	mg/kg	NE	---	---	---	---	---	---
Naphthalene	mg/kg	NE	---	---	---	---	---	---
Nitrobenzene	mg/kg	40	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	NE	---	---	---	---	---	---
Pentachlorophenol	mg/kg	2000	---	---	---	---	---	---
Phenanthrene	mg/kg	NE	---	---	---	---	---	---
Phenol	mg/kg	NE	---	---	---	---	---	---
Pyrene	mg/kg	NE	---	---	---	---	---	---
Pyridine	mg/kg	100	---	---	---	---	---	---
Total Metals								
Arsenic	mg/kg	**100**	**59.1**	D	**74.5**	-	**178**	-
Barium	mg/kg	2000	54.1	D	67.3	-	81.9	-
Cadmium	mg/kg	20	0.87	U, D	0.99	-	1.24	-
Chromium	mg/kg	**100**	42.4	D	75.3	-	60.7	-

Laboratory Sample Designation		20X	1709279-30		1709279-31		1709279-32	
Sample Designation			SED-C-18 (0-1_0') - Dried		SED-C-24 (0_-2_9') - Dried		SED-C-17 (0-3_0') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017	
Lead	mg/kg	**100**	**256**	D	**345**	-	**1940**	-
Mercury	mg/kg	**4**	1.77	D	1.23	D	**8.25**	D
Selenium	mg/kg	**20**	9.59	D	4.57	D	**317**	D
Silver	mg/kg	100	0.87	U, D	1.35	-	1.02	-
Pesticides								
4,4´-DDD	mg/kg	NE	---	---	---	---	---	---
4,4´-DDE	mg/kg	NE	---	---	---	---	---	---
4,4´-DDT	mg/kg	NE	---	---	---	---	---	---
Aldrin	mg/kg	NE	---	---	---	---	---	---
alpha-BHC	mg/kg	NE	---	---	---	---	---	---
alpha-Chlordane	mg/kg	NE	---	---	---	---	---	---
beta-BHC	mg/kg	NE	---	---	---	---	---	---
Chlordane (Total)	mg/kg	0.6	---	---	---	---	---	---
delta-BHC	mg/kg	NE	---	---	---	---	---	---
Dieldrin	mg/kg	NE	---	---	---	---	---	---
Endosulfan I	mg/kg	NE	---	---	---	---	---	---
Endosulfan II	mg/kg	NE	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	NE	---	---	---	---	---	---
Endrin	mg/kg	0.4	---	---	---	---	---	---
Endrin Ketone	mg/kg	NE	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	8	---	---	---	---	---	---
gamma-Chlordane	mg/kg	NE	---	---	---	---	---	---
Heptachlor	mg/kg	0.16	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	0.16	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	2.6	---	---	---	---	---	---
Methoxychlor	mg/kg	200	---	---	---	---	---	---
Toxaphene	mg/kg	10	---	---	---	---	---	---
PCBs								
Aroclor 1016	mg/kg	NE	---	---	---	---	---	---
Aroclor 1221	mg/kg	NE	---	---	---	---	---	---
Aroclor 1232	mg/kg	NE	---	---	---	---	---	---
Aroclor 1242	mg/kg	NE	---	---	---	---	---	---
Aroclor 1248	mg/kg	NE	---	---	---	---	---	---
Aroclor 1254	mg/kg	NE	---	---	---	---	---	---
Aroclor 1260	mg/kg	NE	---	---	---	---	---	---
Aroclor 1262	mg/kg	NE	---	---	---	---	---	---
Aroclor 1268	mg/kg	NE	---	---	---	---	---	---
Herbicides								
2,4,5-T	mg/kg	NE	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	20	---	---	---	---	---	---
2,4-D	mg/kg	200	---	---	---	---	---	---
2,4-DB	mg/kg	NE	---	---	---	---	---	---
Dalapon	mg/kg	NE	---	---	---	---	---	---
Dicamba	mg/kg	NE	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709279-30		1709279-31		1709279-32	
Sample Designation			SED-C-18 (0-1_0') - Dried		SED-C-24 (0_-2_9') - Dried		SED-C-17 (0-3_0') - Dried	
Sample Date			09/12/2017		09/12/2017		09/12/2017	
Dichlorprop	mg/kg	NE	---	---	---	---	---	---
Dinoseb	mg/kg	NE	---	---	---	---	---	---
MCPA	mg/kg	NE	---	---	---	---	---	---
MCPP	mg/kg	NE	---	---	---	---	---	---
Classical Chemistry								
Corrosivity (pH)	S.U.	NE	---	---	---	---	---	---
Flashpoint	°F	NE	---	---	---	---	---	---
Percent Moisture	%	NE	---	---	---	---	---	---
Reactive Cyanide	mg/kg	NE	---	---	---	---	---	---
Reactive Sulfide	mg/kg	NE	---	---	---	---	---	---
TCLP Metals								
Arsenic	mg/L	5	---	---	---	---	---	---
Barium	mg/L	100	---	---	---	---	---	---
Cadmium	mg/L	NE	---	---	---	---	---	---
Chromium	mg/L	NE	---	---	---	---	---	---
Lead	mg/L	5	---	---	---	---	---	---
Mercury	mg/L	NE	---	---	---	---	---	---
Selenium	mg/L	NE	---	---	---	---	---	---
Silver	mg/L	NE	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709323-01		1709323-02		1709323-03		1709323-04		1709323-05		1709323-06		1709323-07		1709323-08		1709323-09	
Sample Designation			SED-C-12 (0-1_8')		SED-G-12 (1_08-1_44')		SED-C-15 (0-1_9')		SED-G-15 (1_52-1_9')		SED-C-16 (0-3_1')		SED-G-16 (0_62-1_24')		SED-C-49 (0-2_5')		SED-G-49 (2_0-2_5')		SED-C-14 (0-2_8')	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																				
Soil Type																				
Group Designation																				
VOCs - Low																				
1,1,1,2-Tetrachloroethane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,1,1-Trichloroethane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,1,2,2-Tetrachloroethane	mg/kg	NE	---	---	0.0028	U	---	---	0.0019	U	---	---	0.0026	U	---	---	**0.0063**	U	---	---
1,1,2-Trichloroethane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,1-Dichloroethane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,1-Dichloroethene	mg/kg	14	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,1-Dichloropropene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,2,3-Trichlorobenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,2,3-Trichloropropane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,2,4-Trichlorobenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,2,4-Trimethylbenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,2-Dibromoethane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,2-Dichlorobenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0616	-	---	---
1,2-Dichloroethane	mg/kg	10	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,2-Dichloropropane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,3,5-Trimethylbenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,3-Dichlorobenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,3-Dichloropropane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,4-Dichlorobenzene	mg/kg	150	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
1,4-Dioxane	mg/kg	NE	---	---	0.138	U	---	---	0.0925	U	---	---	0.131	U	---	---	**0.315**	U	---	---
2,2-Dichloropropane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
2-Butanone	mg/kg	4000	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.152	-	---	---
2-Chlorotoluene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
2-Hexanone	mg/kg	NE	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.0315	U	---	---
4-Chlorotoluene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
4-Isopropyltoluene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
4-Methyl-2-Pentanone	mg/kg	NE	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.0315	U	---	---
Acetone	mg/kg	NE	---	---	0.0503	-	---	---	0.0122	-	---	---	0.0169	-	---	---	1.05	-	---	---
Benzene	mg/kg	10	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Bromobenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Bromochloromethane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Bromodichloromethane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Bromoform	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Bromomethane	mg/kg	NE	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.0315	U	---	---
Carbon Disulfide	mg/kg	NE	---	---	0.0172	-	---	---	0.0104	-	---	---	0.0147	-	---	---	0.0158	U	---	---
Carbon Tetrachloride	mg/kg	10	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Chlorobenzene	mg/kg	2000	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0500	-	---	---
Chloroethane	mg/kg	NE	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.0315	U	---	---
Chloroform	mg/kg	120	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Chloromethane	mg/kg	NE	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.0315	U	---	---
cis-1,2-Dichloroethene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
cis-1,3-Dichloropropene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	**0.0158**	U	---	---
Dibromochloromethane	mg/kg	NE	---	---	0.0028	U	---	---	0.0019	U	---	---	0.0026	U	---	---	**0.0063**	U	---	---
Dibromomethane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Dichlorodifluoromethane	mg/kg	NE	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.0315	U	---	---
Diethyl Ether	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0160	-	---	---

Laboratory Sample Designation		20X	1709323-01		1709323-02		1709323-03		1709323-04		1709323-05		1709323-06		1709323-07		1709323-08		1709323-09	
Sample Designation			SED-C-12 (0-1_8')		SED-G-12 (1_08-1_44')		SED-C-15 (0-1_9')		SED-G-15 (1_52-1_9')		SED-C-16 (0-3_1')		SED-G-16 (0_62-1_24')		SED-C-49 (0-2_5')		SED-G-49 (2_0-2_5')		SED-C-14 (0-2_8')	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																				
Soil Type																				
Group Designation																				
Di-isopropyl ether	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Ethyl tertiary-butyl ether	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Ethylbenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Hexachlorobutadiene	mg/kg	10	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Isopropylbenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Methyl tert-Butyl Ether	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Methylene Chloride	mg/kg	NE	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.0315	U	---	---
Naphthalene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
n-Butylbenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
n-Propylbenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
sec-Butylbenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Styrene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
tert-Butylbenzene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Tertiary-amyl methyl ether	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Tetrachloroethene	mg/kg	14	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Tetrahydrofuran	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Toluene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
trans-1,2-Dichloroethene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
trans-1,3-Dichloropropene	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	**0.0158**	U	---	---
Trichloroethene	mg/kg	10	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Trichlorofluoromethane	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Vinyl Chloride	mg/kg	4	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.0315	U	---	---
Xylene O	mg/kg	NE	---	---	0.0069	U	---	---	0.0046	U	---	---	0.0066	U	---	---	0.0158	U	---	---
Xylene P,M	mg/kg	NE	---	---	0.0138	U	---	---	0.0093	U	---	---	0.0131	U	---	---	0.0315	U	---	---
SVOCs																				
1,2,4-Trichlorobenzene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
1,2-Dichlorobenzene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
1,3-Dichlorobenzene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
1,4-Dichlorobenzene	mg/kg	150	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
2,4,5-Trichlorophenol	mg/kg	8000	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
2,4,6-Trichlorophenol	mg/kg	40	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
2,4-Dichlorophenol	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
2,4-Dimethylphenol	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
2,4-Dinitrophenol	mg/kg	NE	2.82	U	---	---	2.45	U	---	---	2.65	U	---	---	1.77	U	---	---	2.55	U
2,4-Dinitrotoluene	mg/kg	2.6	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
2,6-Dinitrotoluene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
2-Chloronaphthalene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
2-Chlorophenol	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
2-Methylnaphthalene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
2-Methylphenol	mg/kg	4000	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
2-Nitrophenol	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
3,3´-Dichlorobenzidine	mg/kg	NE	0.282	U	---	---	0.979	U	---	---	0.265	U	---	---	0.442	U	---	---	0.255	U
3+4-Methylphenol	mg/kg	4000	1.13	U	---	---	0.979	U	---	---	1.06	U	---	---	1.77	U	---	---	1.02	U
4-Bromophenyl-phenylether	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
4-Chloroaniline	mg/kg	NE	0.282	U	---	---	0.979	U	---	---	0.265	U	---	---	0.442	U	---	---	0.255	U
4-Nitrophenol	mg/kg	NE	2.82	U	---	---	2.45	U	---	---	2.65	U	---	---	4.42	U	---	---	2.55	U
Acenaphthene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Acenaphthylene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U

Laboratory Sample Designation		20X	1709323-01		1709323-02		1709323-03		1709323-04		1709323-05		1709323-06		1709323-07		1709323-08		1709323-09	
Sample Designation			SED-C-12 (0-1_8')		SED-G-12 (1_08-1_44')		SED-C-15 (0-1_9')		SED-G-15 (1_52-1_9')		SED-C-16 (0-3_1')		SED-G-16 (0_62-1_24')		SED-C-49 (0-2_5')		SED-G-49 (2_0-2_5')		SED-C-14 (0-2_8')	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																				
Soil Type																				
Group Designation																				
Acetophenone	mg/kg	NE	1.13	U	---	---	0.979	U	---	---	1.06	U	---	---	1.77	U	---	---	1.02	U
Aniline	mg/kg	NE	2.82	U	---	---	2.45	U	---	---	2.65	U	---	---	4.42	U	---	---	2.55	U
Anthracene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Azobenzene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Benzo(a)anthracene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Benzo(a)pyrene	mg/kg	NE	0.424	-	---	---	0.245	U	---	---	0.265	U	---	---	0.442	U	---	---	0.255	U
Benzo(b)fluoranthene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Benzo(g,h,i)perylene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Benzo(k)fluoranthene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
bis(2-Chloroethoxy)methane	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
bis(2-Chloroethyl)ether	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
bis(2-chloroisopropyl)Ether	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
bis(2-Ethylhexyl)phthalate	mg/kg	NE	3.21	-	---	---	1.37	-	---	---	29.8	D	---	---	5.16	-	---	---	0.508	U
Butylbenzylphthalate	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Chrysene	mg/kg	NE	0.596	-	---	---	0.245	U	---	---	0.309	-	---	---	0.442	U	---	---	0.255	U
Dibenzo(a,h)Anthracene	mg/kg	NE	0.282	U	---	---	0.245	U	---	---	0.265	U	---	---	0.442	U	---	---	0.255	U
Dibenzofuran	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Diethylphthalate	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Dimethylphthalate	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	**0.881**	U	---	---	0.508	U
Di-n-butylphthalate	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Di-n-octylphthalate	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.726	-	---	---	0.881	U	---	---	0.508	U
Fluoranthene	mg/kg	NE	1.21	-	---	---	0.489	U	---	---	0.629	-	---	---	0.881	U	---	---	0.508	U
Fluorene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Hexachlorobenzene	mg/kg	2.6	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
Hexachlorobutadiene	mg/kg	10	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Hexachloroethane	mg/kg	60	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.442	U	---	---	0.508	U
Indeno(1,2,3-cd)Pyrene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Isophorone	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Naphthalene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Nitrobenzene	mg/kg	40	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
N-Nitrosodimethylamine	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Pentachlorophenol	mg/kg	2000	2.82	U	---	---	2.45	U	---	---	2.65	U	---	---	1.75	U	---	---	2.55	U
Phenanthrene	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Phenol	mg/kg	NE	0.562	U	---	---	0.489	U	---	---	0.529	U	---	---	0.881	U	---	---	0.508	U
Pyrene	mg/kg	NE	1.01	-	---	---	0.489	U	---	---	0.564	-	---	---	0.881	U	---	---	0.508	U
Pyridine	mg/kg	100	2.82	U	---	---	2.45	U	---	---	2.65	U	---	---	4.42	U	---	---	2.55	U
Total Metals																				
Arsenic	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	**20**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																				
4,4´-DDD	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U

Laboratory Sample Designation		20X	1709323-01		1709323-02		1709323-03		1709323-04		1709323-05		1709323-06		1709323-07		1709323-08		1709323-09	
Sample Designation			SED-C-12 (0-1_8')		SED-G-12 (1_08-1_44')		SED-C-15 (0-1_9')		SED-G-15 (1_52-1_9')		SED-C-16 (0-3_1')		SED-G-16 (0_62-1_24')		SED-C-49 (0-2_5')		SED-G-49 (2_0-2_5')		SED-C-14 (0-2_8')	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																				
Soil Type																				
Group Designation																				
4,4´-DDE	mg/kg	NE	0.0043	U	---	---	0.0058	LC, P	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
4,4´-DDT	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Aldrin	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
alpha-BHC	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
alpha-Chlordane	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
beta-BHC	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Chlordane (Total)	mg/kg	0.6	0.0343	U	---	---	0.03	U	---	---	0.0308	U	---	---	0.0555	U	---	---	0.0313	U
delta-BHC	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Dieldrin	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Endosulfan I	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Endosulfan II	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Endosulfan Sulfate	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Endrin	mg/kg	0.4	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Endrin Ketone	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
gamma-BHC (Lindane)	mg/kg	8	0.0009	U	---	---	0.0008	U	---	---	0.0008	U	---	---	0.0014	U	---	---	0.0008	U
gamma-Chlordane	mg/kg	NE	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Heptachlor	mg/kg	0.16	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Heptachlor Epoxide	mg/kg	0.16	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Hexachlorobenzene	mg/kg	2.6	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Methoxychlor	mg/kg	200	0.0043	U	---	---	0.0038	U	---	---	0.0039	U	---	---	0.0069	U	---	---	0.0039	U
Toxaphene	mg/kg	10	0.214	U	---	---	0.188	U	---	---	0.193	U	---	---	0.347	U	---	---	0.196	U
PCBs																				
Aroclor 1016	mg/kg	NE	0.09	U	---	---	0.08	U	---	---	0.08	U	---	---	0.1	U	---	---	0.08	U
Aroclor 1221	mg/kg	NE	0.09	U	---	---	0.08	U	---	---	0.08	U	---	---	0.1	U	---	---	0.08	U
Aroclor 1232	mg/kg	NE	0.09	U	---	---	0.08	U	---	---	0.08	U	---	---	0.1	U	---	---	0.08	U
Aroclor 1242	mg/kg	NE	0.2	-	---	---	0.2	-	---	---	0.08	U	---	---	0.7	-	---	---	0.08	U
Aroclor 1248	mg/kg	NE	0.09	U	---	---	0.08	U	---	---	0.08	U	---	---	0.1	U	---	---	0.08	U
Aroclor 1254	mg/kg	NE	0.2	-	---	---	0.5	-	---	---	0.08	U	---	---	**1.4**	-	---	---	0.08	U
Aroclor 1260	mg/kg	NE	0.09	U	---	---	0.2	-	---	---	0.08	U	---	---	0.4	-	---	---	0.08	U
Aroclor 1262	mg/kg	NE	0.09	U	---	---	0.08	U	---	---	0.08	U	---	---	0.1	U	---	---	0.08	U
Aroclor 1268	mg/kg	NE	0.09	U	---	---	0.08	U	---	---	0.08	U	---	---	0.1	U	---	---	0.08	U
Herbicides																				
2,4,5-T	mg/kg	NE	0.149	U, D	---	---	0.029	U	---	---	3.02	U, D	---	---	0.255	U, D	---	---	0.029	U
2,4,5-TP (Silvex)	mg/kg	20	0.149	U, D	---	---	0.029	U	---	---	3.02	U, D	---	---	0.255	U, D	---	---	0.029	U
2,4-D	mg/kg	200	0.736	U, D	---	---	0.189	-	---	---	14.9	U, D	---	---	1.26	U, D	---	---	0.142	U
2,4-DB	mg/kg	NE	0.743	U, D	---	---	0.144	U	---	---	15.1	U, D	---	---	1.27	U, D	---	---	0.143	U
Dalapon	mg/kg	NE	0.712	U, D	---	---	0.138	U	---	---	14.5	U, D	---	---	1.22	U, D	---	---	0.137	U
Dicamba	mg/kg	NE	0.182	LC, P, D	---	---	0.156	LC, P	---	---	2.99	U, D	---	---	0.252	U, D	---	---	0.028	U
Dichlorprop	mg/kg	NE	1.37	LC, P, D	---	---	0.191	LC, P	---	---	14.9	U, D	---	---	1.26	U, D	---	---	0.142	U
Dinoseb	mg/kg	NE	0.743	U, D	---	---	0.144	U	---	---	15.1	U, D	---	---	1.27	U, D	---	---	0.143	U
MCPA	mg/kg	NE	36.4	U, D	---	---	7.06	U	---	---	73.8	#	---	---	62.3	U, D	---	---	7.01	U
MCPP	mg/kg	NE	36.8	#	---	---	7.13	#	---	---	74.6	#	---	---	63.0	#	---	---	7.08	#
Classical Chemistry																				
Corrosivity (pH)	S.U.	NE	8.00	-	---	---	7.98	-	---	---	7.93	-	---	---	6.77	-	---	---	8.15	-
Flashpoint	°F	NE	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>
Percent Moisture	%	NE	42	-	---	---	34	-	---	---	37	-	---	---	64	-	---	---	36	-

Laboratory Sample Designation		20X	1709323-01		1709323-02		1709323-03		1709323-04		1709323-05		1709323-06		1709323-07		1709323-08		1709323-09	
Sample Designation			SED-C-12 (0-1_8')		SED-G-12 (1_08-1_44')		SED-C-15 (0-1_9')		SED-G-15 (1_52-1_9')		SED-C-16 (0-3_1')		SED-G-16 (0_62-1_24')		SED-C-49 (0-2_5')		SED-G-49 (2_0-2_5')		SED-C-14 (0-2_8')	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																				
Soil Type																				
Group Designation																				
Reactive Cyanide	mg/kg	NE	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U
Reactive Sulfide	mg/kg	NE	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U
TCLP Metals																				
Arsenic	mg/L	NE	0.350	-	---	---	0.229	-	---	---	0.234	-	---	---	0.131	-	---	---	0.104	-
Barium	mg/L	NE	0.126	-	---	---	0.118	-	---	---	0.098	-	---	---	0.056	-	---	---	0.090	-
Cadmium	mg/L	NE	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U
Chromium	mg/L	NE	0.02	U	---	---	0.02	U	---	---	0.038	-	---	---	0.02	U	---	---	0.064	-
Lead	mg/L	NE	0.577	-	---	---	0.592	-	---	---	0.165	-	---	---	0.05	U	---	---	0.200	-
Mercury	mg/L	NE	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U
Selenium	mg/L	NE	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Silver	mg/L	NE	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U

Laboratory Sample Designation		20X	1709323-10		1709323-11		1709323-12		1709323-13		1709323-14		1709323-15	
Sample Designation			SED-G-14 (1_68-2_24')		SED-C-12 (0-1_8') - Dried		SED-C-15 (0-1_9') - Dried		SED-C-16 (0-3_1') - Dried		SED-C-49 (0-2_5') - Dried		SED-C-14 (0-2_8') - Dried	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth														
Soil Type														
Group Designation														
VOCs - Low														
1,1,1,2-Tetrachloroethane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	NE	0.0023	U	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	14	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	10	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	150	0.0058	U	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	NE	0.115	U	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	4000	0.0115	U	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	NE	0.0115	U	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	NE	0.0115	U	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	NE	0.0122	-	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	10	0.0058	U	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	NE	0.0115	U	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	10	0.0058	U	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	2000	0.0058	U	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	NE	0.0115	U	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	120	0.0058	U	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	NE	0.0115	U	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	NE	0.0023	U	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	NE	0.0115	U	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709323-10		1709323-11		1709323-12		1709323-13		1709323-14		1709323-15	
Sample Designation			SED-G-14 (1_68-2_24')		SED-C-12 (0-1_8') - Dried		SED-C-15 (0-1_9') - Dried		SED-C-16 (0-3_1') - Dried		SED-C-49 (0-2_5') - Dried		SED-C-14 (0-2_8') - Dried	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth														
Soil Type														
Group Designation														
Di-isopropyl ether	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	10	0.0058	U	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	NE	0.0115	U	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	14	0.0058	U	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	10	0.0058	U	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	4	0.0115	U	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	NE	0.0058	U	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	NE	0.0115	U	---	---	---	---	---	---	---	---	---	---
SVOCs														
1,2,4-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	150	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	8000	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	40	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	2.6	---	---	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	4000	---	---	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	4000	---	---	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709323-10		1709323-11		1709323-12		1709323-13		1709323-14		1709323-15	
Sample Designation			SED-G-14 (1_68-2_24')		SED-C-12 (0-1_8') - Dried		SED-C-15 (0-1_9') - Dried		SED-C-16 (0-3_1') - Dried		SED-C-49 (0-2_5') - Dried		SED-C-14 (0-2_8') - Dried	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth														
Soil Type														
Group Designation														
Acetophenone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	2.6	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	60	---	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	40	---	---	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	2000	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---
Total Metals														
Arsenic	mg/kg	**100**	---	---	**138**	-	**130**	-	**32.2**	-	**270**	-	8.77	-
Barium	mg/kg	2000	---	---	54.3	-	52.0	-	43.1	-	72.3	-	19.8	-
Cadmium	mg/kg	20	---	---	0.51	-	1.11	-	0.49	U	1.62	-	0.49	U
Chromium	mg/kg	100	---	---	48.2	-	58.6	-	35.9	-	79.9	-	18.7	-
Lead	mg/kg	**100**	---	---	**259**	-	**458**	-	81.8	-	**390**	-	21.8	-
Mercury	mg/kg	4	---	---	1.63	D	3.37	D	0.344	-	2.25	D	0.099	-
Selenium	mg/kg	**20**	---	---	10.2	D	**22.5**	D	4.56	D	6.18	D	0.81	D
Silver	mg/kg	100	---	---	0.47	U	0.92	-	0.49	U	1.46	-	0.49	U
Pesticides														
4,4´-DDD	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709323-10		1709323-11		1709323-12		1709323-13		1709323-14		1709323-15	
Sample Designation			SED-G-14 (1_68-2_24')		SED-C-12 (0-1_8') - Dried		SED-C-15 (0-1_9') - Dried		SED-C-16 (0-3_1') - Dried		SED-C-49 (0-2_5') - Dried		SED-C-14 (0-2_8') - Dried	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth														
Soil Type														
Group Designation														
4,4´-DDE	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	0.6	---	---	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	0.4	---	---	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	8	---	---	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	0.16	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	0.16	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	2.6	---	---	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	200	---	---	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---
PCBs														
Aroclor 1016	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Herbicides														
2,4,5-T	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	20	---	---	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	200	---	---	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Classical Chemistry														
Corrosivity (pH)	S.U.	NE	---	---	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	NE	---	---	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	NE	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		20X	1709323-10		1709323-11		1709323-12		1709323-13		1709323-14		1709323-15	
Sample Designation			SED-G-14 (1_68-2_24')		SED-C-12 (0-1_8') - Dried		SED-C-15 (0-1_9') - Dried		SED-C-16 (0-3_1') - Dried		SED-C-49 (0-2_5') - Dried		SED-C-14 (0-2_8') - Dried	
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth														
Soil Type														
Group Designation														
Reactive Cyanide	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---
TCLP Metals														
Arsenic	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	NE	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	2014-RCS2	2014-S1GW1	2014-S1GW2	2014-S1GW3	2014-S2GW1	2014-S2GW2	2014-S2GW3	2014-S3GW1	2014-S3GW2
Sample Designation											
Sample Date											
Sample Depth											
Soil Type											
Group Designation											
VOCs - Low											
1,1,1,2-Tetrachloroethane	mg/kg	0.1	0.1	0.1	0.1	80	0.1	0.1	100	0.1	0.1
1,1,1-Trichloroethane	mg/kg	30	600	30	500	500	30	600	1000	30	600
1,1,2,2-Tetrachloroethane	mg/kg	**0.005**	0.02	**0.005**	0.02	10	**0.005**	0.02	10	**0.005**	0.02
1,1,2-Trichloroethane	mg/kg	0.1	2	0.1	2	40	0.1	2	60	0.1	2
1,1-Dichloroethane	mg/kg	0.4	9	0.4	9	500	0.4	5	1000	0.4	9
1,1-Dichloroethene	mg/kg	3	40	3	40	500	3	40	1000	3	40
1,1-Dichloropropene	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
1,2,3-Trichlorobenzene	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
1,2,3-Trichloropropane	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
1,2,4-Trichlorobenzene	mg/kg	2	6	2	6	700	2	70	900	2	6
1,2,4-Trimethylbenzene	mg/kg	1000	10000	100	100	100	300	500	500	300	500
1,2-Dibromo-3-Chloropropane	mg/kg	10	100	NE	NE	NE	NE	NE	NE	NE	NE
1,2-Dibromoethane	mg/kg	0.1	0.1	0.1	0.1	1	0.1	0.1	4	0.1	0.1
1,2-Dichlorobenzene	mg/kg	9	100	9	100	300	9	30	300	9	100
1,2-Dichloroethane	mg/kg	0.1	0.1	0.1	0.1	20	0.1	0.1	90	0.1	0.1
1,2-Dichloropropane	mg/kg	0.1	0.1	0.1	0.1	30	0.1	0.1	100	0.1	0.1
1,3,5-Trimethylbenzene	mg/kg	10	100	100	100	100	300	500	500	300	500
1,3-Dichlorobenzene	mg/kg	3	200	3	100	100	1	40	500	3	200
1,3-Dichloropropane	mg/kg	500	5000	NE	NE	NE	NE	NE	NE	NE	NE
1,4-Dichlorobenzene	mg/kg	0.7	1	0.7	1	80	0.7	4	300	0.7	1
1,4-Dioxane	mg/kg	**0.2**	6	**0.2**	6	20	**0.2**	6	500	**0.2**	6
2,2-Dichloropropane	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
2-Butanone	mg/kg	4	50	4	50	400	4	50	400	4	50
2-Chlorotoluene	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
2-Hexanone	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
4-Chlorotoluene	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
4-Isopropyltoluene	mg/kg	100	500	100	100	100	300	500	500	300	500
4-Methyl-2-Pentanone	mg/kg	0.4	50	0.4	50	400	0.4	50	400	0.4	50
Acetone	mg/kg	6	50	6	50	400	6	50	400	6	50
Benzene	mg/kg	2	200	2	40	40	2	200	200	2	400
Bromobenzene	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
Bromochloromethane	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Bromodichloromethane	mg/kg	0.1	0.1	0.1	0.1	30	0.1	0.1	100	0.1	0.1
Bromoform	mg/kg	0.1	1	0.1	1	300	0.1	1	800	0.1	1
Bromomethane	mg/kg	0.5	0.5	0.5	0.5	30	0.5	0.5	30	0.5	0.5
Carbon Disulfide	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
Carbon Tetrachloride	mg/kg	5	5	10	5	30	10	5	60	10	5
Chlorobenzene	mg/kg	1	3	1	3	100	1	3	100	1	3
Chloroethane	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
Chloroform	mg/kg	0.2	0.2	0.4	0.2	500	0.4	0.3	800	0.4	0.2
Chloromethane	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
cis-1,2-Dichloroethene	mg/kg	0.1	0.1	0.3	0.1	100	0.3	0.4	500	0.3	0.1
cis-1,3-Dichloropropene	mg/kg	**0.01**	0.1	**0.01**	0.4	20	**0.01**	0.4	70	**0.01**	0.4
Dibromochloromethane	mg/kg	**0.005**	0.03	**0.005**	0.03	20	**0.005**	0.03	100	**0.005**	0.03
Dibromomethane	mg/kg	500	5000	NE	NE	NE	NE	NE	NE	NE	NE
Dichlorodifluoromethane	mg/kg	1000	10000	NE	NE	NE	NE	NE	NE	NE	NE
Diethyl Ether	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
Di-isopropyl ether	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE

Laboratory Sample Designation		2014-RCS1	2014-RCS2	2014-S1GW1	2014-S1GW2	2014-S1GW3	2014-S2GW1	2014-S2GW2	2014-S2GW3	2014-S3GW1	2014-S3GW2
Sample Designation											
Sample Date											
Sample Depth											
Soil Type											
Group Designation											
Ethyl tertiary-butyl ether	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Ethylbenzene	mg/kg	40	1000	40	500	500	40	1000	1000	40	1000
Hexachlorobutadiene	mg/kg	30	100	30	30	30	90	90	90	100	100
Isopropylbenzene	mg/kg	1000	10000	100	100	100	300	500	500	300	500
Methyl tert-Butyl Ether	mg/kg	0.1	100	0.1	100	100	0.1	100	500	0.1	100
Methylene Chloride	mg/kg	0.1	4	0.1	4	400	0.1	20	900	0.1	4
Naphthalene	mg/kg	4	20	4	20	500	4	40	1000	4	20
n-Butylbenzene	mg/kg	100	500	100	100	100	300	500	500	300	500
n-Propylbenzene	mg/kg	100	1000	100	100	100	300	500	500	300	500
sec-Butylbenzene	mg/kg	100	500	100	100	100	300	500	500	300	500
Styrene	mg/kg	3	4	3	4	70	3	4	200	3	4
tert-Butylbenzene	mg/kg	100	1000	100	100	100	300	500	500	300	500
Tertiary-amyl methyl ether	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Tetrachloroethene	mg/kg	1	10	1	10	30	1	10	200	1	10
Tetrahydrofuran	mg/kg	500	5000	NE	NE	NE	NE	NE	NE	NE	NE
Toluene	mg/kg	30	1000	30	500	500	30	1000	1000	30	2000
trans-1,2-Dichloroethene	mg/kg	1	1	1	1	500	1	1	1000	1	1
trans-1,3-Dichloropropene	mg/kg	**0.01**	0.1	**0.01**	0.4	20	**0.01**	0.4	70	**0.01**	0.4
Trichloroethene	mg/kg	0.3	0.3	0.3	0.3	30	0.3	2	700	0.3	0.3
Trichlorofluoromethane	mg/kg	1000	10000	NE	NE	NE	NE	NE	NE	NE	NE
Vinyl Chloride	mg/kg	0.7	0.7	0.9	0.7	1	0.9	0.7	4	0.9	0.7
Xylene O	mg/kg	100	100	400	100	500	400	300	1000	400	100
Xylene P,M	mg/kg	100	100	400	100	500	400	300	1000	400	100
Xylenes (Total)	mg/kg	100	100	400	100	500	400	300	1000	400	100
SVOCs											
1,2,4-Trichlorobenzene	mg/kg	2	6	2	6	700	2	70	900	2	6
1,2-Dichlorobenzene	mg/kg	9	100	9	100	300	9	30	300	9	100
1,3-Dichlorobenzene	mg/kg	3	200	3	100	100	1	40	500	3	200
1,4-Dichlorobenzene	mg/kg	0.7	1	0.7	1	80	0.7	4	300	0.7	1
2,4,5-Trichlorophenol	mg/kg	4	600	4	1000	600	4	1000	600	4	100
2,4,6-Trichlorophenol	mg/kg	0.7	20	0.7	20	20	0.7	20	20	0.7	20
2,4-Dichlorophenol	mg/kg	0.7	40	0.7	60	40	0.7	60	40	0.7	60
2,4-Dimethylphenol	mg/kg	0.7	100	0.7	100	500	0.7	100	1000	0.7	100
2,4-Dinitrophenol	mg/kg	3	50	3	50	50	3	50	90	3	50
2,4-Dinitrotoluene	mg/kg	0.7	10	0.7	2	2	0.7	10	10	0.7	50
2,6-Dinitrotoluene	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
2-Chloronaphthalene	mg/kg	1000	10000	NE	NE	NE	NE	NE	NE	NE	NE
2-Chlorophenol	mg/kg	0.7	100	0.7	100	100	0.7	100	300	0.7	100
2-Methylnaphthalene	mg/kg	0.7	80	0.7	80	300	0.7	80	500	1	80
2-Methylphenol	mg/kg	500	5000	NE	NE	NE	NE	NE	NE	NE	NE
2-Nitrophenol	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
3,3´-Dichlorobenzidine	mg/kg	3	20	3	3	3	10	10	10	100	100
3+4-Methylphenol	mg/kg	500	5000	NE	NE	NE	NE	NE	NE	NE	NE
4-Bromophenyl-phenylether	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
4-Chloroaniline	mg/kg	1	3	1	7	3	1	100	3	1	40
4-Nitrophenol	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
Acenaphthene	mg/kg	4	3000	4	1000	1000	4	3000	3000	4	5000
Acenaphthylene	mg/kg	1	10	1	600	10	1	600	10	1	600
Acetophenone	mg/kg	1000	10000	NE	NE	NE	NE	NE	NE	NE	NE

Laboratory Sample Designation		2014-RCS1	2014-RCS2	2014-S1GW1	2014-S1GW2	2014-S1GW3	2014-S2GW1	2014-S2GW2	2014-S2GW3	2014-S3GW1	2014-S3GW2
Sample Designation											
Sample Date											
Sample Depth											
Soil Type											
Group Designation											
Aniline	mg/kg	1000	10000	NE	NE	NE	NE	NE	NE	NE	NE
Anthracene	mg/kg	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000
Azobenzene	mg/kg	50	500	NE	NE	NE	NE	NE	NE	NE	NE
Benzo(a)anthracene	mg/kg	7	40	7	7	7	40	40	40	300	300
Benzo(a)pyrene	mg/kg	2	7	2	2	2	4	4	4	30	30
Benzo(b)fluoranthene	mg/kg	7	40	7	7	7	40	40	40	300	300
Benzo(g,h,i)perylene	mg/kg	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000
Benzo(k)fluoranthene	mg/kg	70	400	70	70	70	400	400	400	3000	3000
bis(2-Chloroethoxy)methane	mg/kg	500	5000	NE	NE	NE	NE	NE	NE	NE	NE
bis(2-Chloroethyl)ether	mg/kg	0.7	0.7	0.7	0.7	2	0.7	0.7	3	0.7	0.7
bis(2-chloroisopropyl)Ether	mg/kg	0.7	0.7	0.7	0.7	30	0.7	0.7	50	0.7	0.7
bis(2-Ethylhexyl)phthalate	mg/kg	**90**	600	**90**	**90**	**90**	700	700	700	2000	2000
Butylbenzylphthalate	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
Chrysene	mg/kg	70	400	70	70	70	400	400	400	3000	3000
Dibenzo(a,h)Anthracene	mg/kg	0.7	4	0.7	0.7	0.7	4	4	4	30	30
Dibenzofuran	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
Diethylphthalate	mg/kg	10	200	10	200	300	10	200	300	10	200
Dimethylphthalate	mg/kg	**0.7**	50	**0.7**	50	600	30	50	600	**0.7**	50
Di-n-butylphthalate	mg/kg	50	500	NE	NE	NE	NE	NE	NE	NE	NE
Di-n-octylphthalate	mg/kg	1000	10000	NE	NE	NE	NE	NE	NE	NE	NE
Fluoranthene	mg/kg	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000
Fluorene	mg/kg	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000
Hexachlorobenzene	mg/kg	0.7	0.8	0.7	0.7	0.7	5	5	5	0.8	0.8
Hexachlorobutadiene	mg/kg	30	100	30	30	30	90	90	90	100	100
Hexachloroethane	mg/kg	0.7	3	0.7	3	50	0.7	3	100	0.7	3
Indeno(1,2,3-cd)Pyrene	mg/kg	7	40	7	7	7	40	40	40	300	300
Isophorone	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
Naphthalene	mg/kg	4	20	4	20	500	4	40	1000	4	20
Nitrobenzene	mg/kg	500	5000	NE	NE	NE	NE	NE	NE	NE	NE
N-Nitrosodimethylamine	mg/kg	50	500	NE	NE	NE	NE	NE	NE	NE	NE
Pentachlorophenol	mg/kg	3	10	3	3	3	3	70	10	3	70
Phenanthrene	mg/kg	10	1000	10	500	500	10	1000	1000	20	3000
Phenol	mg/kg	1	20	1	50	20	1	50	20	1	50
Pyrene	mg/kg	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000
Pyridine	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Total Metals											
Arsenic	mg/kg	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**50**	**50**
Barium	mg/kg	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000
Cadmium	mg/kg	70	100	70	70	70	30	30	30	100	100
Chromium	mg/kg	**100**	200	**100**	**100**	**100**	200	200	200	200	200
Lead	mg/kg	**200**	**600**	**200**	**200**	**200**	**300**	**300**	**300**	**600**	**600**
Mercury	mg/kg	20	30	20	20	20	30	30	30	30	30
Selenium	mg/kg	400	700	400	400	400	800	800	800	700	700
Silver	mg/kg	100	200	100	100	100	200	200	200	200	200
Pesticides											
4,4´-DDD	mg/kg	8	40	8	8	8	30	30	30	60	60
4,4´-DDE	mg/kg	6	30	6	6	6	20	20	20	60	60
4,4´-DDT	mg/kg	6	30	6	6	6	20	20	20	60	60

Laboratory Sample Designation		2014-RCS1	2014-RCS2	2014-S1GW1	2014-S1GW2	2014-S1GW3	2014-S2GW1	2014-S2GW2	2014-S2GW3	2014-S3GW1	2014-S3GW2
Sample Designation											
Sample Date											
Sample Depth											
Soil Type											
Group Designation											
Aldrin	mg/kg	0.08	0.5	0.08	0.08	0.08	0.4	0.4	0.4	3	3
alpha-BHC	mg/kg	50	500	NE	NE	NE	NE	NE	NE	NE	NE
alpha-Chlordane	mg/kg	5	30	5	5	5	30	30	30	60	60
beta-BHC	mg/kg	10	100	NE	NE	NE	NE	NE	NE	NE	NE
Chlordane (Total)	mg/kg	5	30	5	5	5	30	30	30	60	60
delta-BHC	mg/kg	10	100	NE	NE	NE	NE	NE	NE	NE	NE
Dieldrin	mg/kg	0.08	0.5	0.08	0.08	0.08	0.4	0.4	0.4	3	3
Endosulfan I	mg/kg	0.5	1	0.5	300	1	0.5	300	1	0.5	500
Endosulfan II	mg/kg	0.5	1	0.5	300	1	0.5	300	1	0.5	500
Endosulfan Sulfate	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Endrin	mg/kg	10	20	10	10	10	10	10	10	20	20
Endrin Ketone	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
gamma-BHC (Lindane)	mg/kg	0.003	0.5	0.003	1	0.5	0.003	2	0.5	0.003	2
gamma-Chlordane	mg/kg	5	30	5	5	5	30	30	30	60	60
Heptachlor	mg/kg	0.3	2	0.3	0.3	0.3	2	2	2	10	10
Heptachlor Epoxide	mg/kg	0.1	0.9	0.1	0.1	0.1	0.7	0.7	0.7	1	1
Hexachlorobenzene	mg/kg	0.7	0.8	0.7	0.7	0.7	5	5	5	0.8	0.8
Methoxychlor	mg/kg	200	400	200	200	200	300	300	300	400	400
Toxaphene	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PCBs											
Aroclor 1016	mg/kg	1	4	1	1	1	3	3	3	4	4
Aroclor 1221	mg/kg	1	4	1	1	1	3	3	3	4	4
Aroclor 1232	mg/kg	1	4	1	1	1	3	3	3	4	4
Aroclor 1242	mg/kg	**1**	**4**	**1**	**1**	**1**	**3**	**3**	**3**	**4**	**4**
Aroclor 1248	mg/kg	1	4	1	1	1	3	3	3	4	4
Aroclor 1254	mg/kg	**1**	**4**	**1**	**1**	**1**	**3**	**3**	**3**	**4**	**4**
Aroclor 1260	mg/kg	**1**	4	**1**	**1**	**1**	3	3	3	4	4
Aroclor 1262	mg/kg	1	4	1	1	1	3	3	3	4	4
Aroclor 1268	mg/kg	1	4	1	1	1	3	3	3	4	4
Herbicides											
2,4,5-T	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
2,4,5-TP (Silvex)	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
2,4-D	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
2,4-DB	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
Dalapon	mg/kg	1000	10000	NE	NE	NE	NE	NE	NE	NE	NE
Dicamba	mg/kg	500	5000	NE	NE	NE	NE	NE	NE	NE	NE
Dichlorprop	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Dinoseb	mg/kg	500	5000	NE	NE	NE	NE	NE	NE	NE	NE
MCPA	mg/kg	100	1000	NE	NE	NE	NE	NE	NE	NE	NE
MCPP	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Classical Chemistry											
Corrosivity (pH)	S.U.	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Flashpoint	°F	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Percent Moisture	%	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Reactive Cyanide	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Reactive Sulfide	mg/kg	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Laboratory Sample Designation		2014-RCS1	2014-RCS2	2014-S1GW1	2014-S1GW2	2014-S1GW3	2014-S2GW1	2014-S2GW2	2014-S2GW3	2014-S3GW1	2014-S3GW2
Sample Designation											
Sample Date											
Sample Depth											
Soil Type											
Group Designation											
TCLP Metals											
Arsenic	mg/L	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Barium	mg/L	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Cadmium	mg/L	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Chromium	mg/L	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Lead	mg/L	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Mercury	mg/L	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Selenium	mg/L	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Silver	mg/L	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Laboratory Sample Designation		2014-RCS1	2014-S3GW3	1709324-01		1709324-02		1709324-03		1709324-04		1709324-05		1709324-06		17093
Sample Designation				SED-C-50 (0-6_0')		SED-G-50 (4_8-6_0')		SED-C-78 (0-3_0')		SED-G-78 (1_2-1_8')		SED-C-79 (0-2_6')		SED-G-79 (1_04-1_56')		SED-C-2
Sample Date				09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																
Soil Type																
Group Designation																
VOCs - Low																
1,1,1,2-Tetrachloroethane	mg/kg	0.1	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,1,1-Trichloroethane	mg/kg	30	3000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,1,2,2-Tetrachloroethane	mg/kg	**0.005**	400	---	---	**0.0105**	U	---	---	0.0039	U	---	---	0.0049	U	---
1,1,2-Trichloroethane	mg/kg	0.1	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,1-Dichloroethane	mg/kg	0.4	1000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,1-Dichloroethene	mg/kg	3	3000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,1-Dichloropropene	mg/kg	NE	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,2,3-Trichlorobenzene	mg/kg	NE	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,2,3-Trichloropropane	mg/kg	100	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,2,4-Trichlorobenzene	mg/kg	2	5000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,2,4-Trimethylbenzene	mg/kg	1000	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,2-Dibromo-3-Chloropropane	mg/kg	10	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,2-Dibromoethane	mg/kg	0.1	40	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,2-Dichlorobenzene	mg/kg	9	300	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,2-Dichloroethane	mg/kg	0.1	300	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,2-Dichloropropane	mg/kg	0.1	1000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,3,5-Trimethylbenzene	mg/kg	10	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,3-Dichlorobenzene	mg/kg	3	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,3-Dichloropropane	mg/kg	500	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,4-Dichlorobenzene	mg/kg	0.7	2000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
1,4-Dioxane	mg/kg	**0.2**	500	---	---	**0.525**	U	---	---	0.196	U	---	---	**0.245**	U	---
2,2-Dichloropropane	mg/kg	NE	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
2-Butanone	mg/kg	4	400	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
2-Chlorotoluene	mg/kg	100	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
2-Hexanone	mg/kg	100	NE	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
4-Chlorotoluene	mg/kg	NE	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
4-Isopropyltoluene	mg/kg	100	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
4-Methyl-2-Pentanone	mg/kg	0.4	400	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
Acetone	mg/kg	6	400	---	---	0.518	-	---	---	0.0811	-	---	---	0.115	-	---
Benzene	mg/kg	2	1000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Bromobenzene	mg/kg	100	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Bromochloromethane	mg/kg	NE	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Bromodichloromethane	mg/kg	0.1	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Bromoform	mg/kg	0.1	800	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Bromomethane	mg/kg	0.5	30	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
Carbon Disulfide	mg/kg	100	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0260	-	---
Carbon Tetrachloride	mg/kg	5	1000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Chlorobenzene	mg/kg	1	100	---	---	0.456	-	---	---	0.0098	U	---	---	0.0122	U	---
Chloroethane	mg/kg	100	NE	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
Chloroform	mg/kg	0.2	1000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Chloromethane	mg/kg	100	NE	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
cis-1,2-Dichloroethene	mg/kg	0.1	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
cis-1,3-Dichloropropene	mg/kg	**0.01**	100	---	---	**0.0263**	U	---	---	0.0098	U	---	---	**0.0122**	U	---
Dibromochloromethane	mg/kg	**0.005**	500	---	---	**0.0105**	U	---	---	0.0039	U	---	---	0.0049	U	---
Dibromomethane	mg/kg	500	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Dichlorodifluoromethane	mg/kg	1000	NE	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
Diethyl Ether	mg/kg	100	NE	---	---	0.0554	-	---	---	0.0098	U	---	---	0.0122	U	---
Di-isopropyl ether	mg/kg	100	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---

Laboratory Sample Designation		2014-RCS1	2014-S3GW3	1709324-01		1709324-02		1709324-03		1709324-04		1709324-05		1709324-06		17093
Sample Designation				SED-C-50 (0-6_0')		SED-G-50 (4_8-6_0')		SED-C-78 (0-3_0')		SED-G-78 (1_2-1_8')		SED-C-79 (0-2_6')		SED-G-79 (1_04-1_56')		SED-C-2
Sample Date				09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																
Soil Type																
Group Designation																
Ethyl tertiary-butyl ether	mg/kg	NE	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Ethylbenzene	mg/kg	40	3000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Hexachlorobutadiene	mg/kg	30	100	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Isopropylbenzene	mg/kg	1000	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Methyl tert-Butyl Ether	mg/kg	0.1	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Methylene Chloride	mg/kg	0.1	700	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
Naphthalene	mg/kg	4	3000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
n-Butylbenzene	mg/kg	100	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
n-Propylbenzene	mg/kg	100	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
sec-Butylbenzene	mg/kg	100	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Styrene	mg/kg	3	2000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
tert-Butylbenzene	mg/kg	100	500	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Tertiary-amyl methyl ether	mg/kg	NE	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Tetrachloroethene	mg/kg	1	1000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Tetrahydrofuran	mg/kg	500	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Toluene	mg/kg	30	3000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
trans-1,2-Dichloroethene	mg/kg	1	3000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
trans-1,3-Dichloropropene	mg/kg	**0.01**	100	---	---	**0.0263**	U	---	---	0.0098	U	---	---	**0.0122**	U	---
Trichloroethene	mg/kg	0.3	60	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Trichlorofluoromethane	mg/kg	1000	NE	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Vinyl Chloride	mg/kg	0.7	60	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
Xylene O	mg/kg	100	3000	---	---	0.0263	U	---	---	0.0098	U	---	---	0.0122	U	---
Xylene P,M	mg/kg	100	3000	---	---	0.0525	U	---	---	0.0196	U	---	---	0.0245	U	---
Xylenes (Total)	mg/kg	100	3000	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																
1,2,4-Trichlorobenzene	mg/kg	2	5000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
1,2-Dichlorobenzene	mg/kg	9	300	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
1,3-Dichlorobenzene	mg/kg	3	500	0.935	U	---	---	0.88	U	---	---	0.528	U	---	---	0.828
1,4-Dichlorobenzene	mg/kg	0.7	2000	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
2,4,5-Trichlorophenol	mg/kg	4	200	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
2,4,6-Trichlorophenol	mg/kg	0.7	20	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
2,4-Dichlorophenol	mg/kg	0.7	40	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
2,4-Dimethylphenol	mg/kg	0.7	1000	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
2,4-Dinitrophenol	mg/kg	3	100	1.87	U	---	---	1.76	U	---	---	2.11	U	---	---	1.66
2,4-Dinitrotoluene	mg/kg	0.7	80	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
2,6-Dinitrotoluene	mg/kg	100	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
2-Chloronaphthalene	mg/kg	1000	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
2-Chlorophenol	mg/kg	0.7	300	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
2-Methylnaphthalene	mg/kg	0.7	500	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
2-Methylphenol	mg/kg	500	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
2-Nitrophenol	mg/kg	100	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
3,3´-Dichlorobenzidine	mg/kg	3	100	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
3+4-Methylphenol	mg/kg	500	NE	1.87	U	---	---	1.76	U	---	---	2.11	U	---	---	1.66
4-Bromophenyl-phenylether	mg/kg	100	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
4-Chloroaniline	mg/kg	1	3	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
4-Nitrophenol	mg/kg	100	NE	4.69	U	---	---	4.41	U	---	---	5.28	U	---	---	4.15
Acenaphthene	mg/kg	4	5000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Acenaphthylene	mg/kg	1	10	0.935	U	---	---	0.88	U	---	---	0.528	U	---	---	0.828
Acetophenone	mg/kg	1000	NE	1.87	U	---	---	1.76	U	---	---	2.11	U	---	---	1.66

Laboratory Sample Designation		2014-RCS1	2014-S3GW3	1709324-01		1709324-02		1709324-03		1709324-04		1709324-05		1709324-06		17093
Sample Designation				SED-C-50 (0-6_0')		SED-G-50 (4_8-6_0')		SED-C-78 (0-3_0')		SED-G-78 (1_2-1_8')		SED-C-79 (0-2_6')		SED-G-79 (1_04-1_56')		SED-C-2
Sample Date				09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																
Soil Type																
Group Designation																
Aniline	mg/kg	1000	NE	4.69	U	---	---	4.41	U	---	---	5.28	U	---	---	4.15
Anthracene	mg/kg	1000	5000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Azobenzene	mg/kg	50	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Benzo(a)anthracene	mg/kg	7	300	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Benzo(a)pyrene	mg/kg	2	30	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
Benzo(b)fluoranthene	mg/kg	7	300	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Benzo(g,h,i)perylene	mg/kg	1000	5000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Benzo(k)fluoranthene	mg/kg	70	3000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
bis(2-Chloroethoxy)methane	mg/kg	500	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
bis(2-Chloroethyl)ether	mg/kg	0.7	80	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
bis(2-chloroisopropyl)Ether	mg/kg	0.7	1000	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
bis(2-Ethylhexyl)phthalate	mg/kg	**90**	2000	**133**	D	---	---	21.9	-	---	---	**171**	D	---	---	**149**
Butylbenzylphthalate	mg/kg	100	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Chrysene	mg/kg	70	3000	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
Dibenzo(a,h)Anthracene	mg/kg	0.7	30	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
Dibenzofuran	mg/kg	100	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Diethylphthalate	mg/kg	10	300	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Dimethylphthalate	mg/kg	**0.7**	600	**0.935**	U	---	---	**0.88**	U	---	---	**1.05**	U	---	---	**0.828**
Di-n-butylphthalate	mg/kg	50	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Di-n-octylphthalate	mg/kg	1000	NE	37.7	D	---	---	2.08	-	---	---	49.7	D	---	---	8.97
Fluoranthene	mg/kg	1000	5000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Fluorene	mg/kg	1000	5000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Hexachlorobenzene	mg/kg	0.7	0.8	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
Hexachlorobutadiene	mg/kg	30	100	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Hexachloroethane	mg/kg	0.7	200	0.469	U	---	---	0.441	U	---	---	0.528	U	---	---	0.415
Indeno(1,2,3-cd)Pyrene	mg/kg	7	300	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Isophorone	mg/kg	100	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Naphthalene	mg/kg	4	3000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Nitrobenzene	mg/kg	500	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
N-Nitrosodimethylamine	mg/kg	50	NE	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Pentachlorophenol	mg/kg	3	10	1.87	U	---	---	1.76	U	---	---	2.11	U	---	---	1.66
Phenanthrene	mg/kg	10	3000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Phenol	mg/kg	1	20	0.935	U	---	---	0.88	U	---	---	0.528	U	---	---	0.828
Pyrene	mg/kg	1000	5000	0.935	U	---	---	0.88	U	---	---	1.05	U	---	---	0.828
Pyridine	mg/kg	NE	NE	4.69	U	---	---	4.41	U	---	---	5.28	U	---	---	4.15
Total Metals																
Arsenic	mg/kg	**20**	**50**	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	1000	5000	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	70	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	**100**	200	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	**200**	**600**	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	20	30	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	400	700	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	100	200	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																
4,4´-DDD	mg/kg	8	60	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
4,4´-DDE	mg/kg	6	60	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
4,4´-DDT	mg/kg	6	60	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064

Laboratory Sample Designation		2014-RCS1	2014-S3GW3	1709324-01		1709324-02		1709324-03		1709324-04		1709324-05		1709324-06		17093
Sample Designation				SED-C-50 (0-6_0')		SED-G-50 (4_8-6_0')		SED-C-78 (0-3_0')		SED-G-78 (1_2-1_8')		SED-C-79 (0-2_6')		SED-G-79 (1_04-1_56')		SED-C-2
Sample Date				09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																
Soil Type																
Group Designation																
Aldrin	mg/kg	0.08	3	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
alpha-BHC	mg/kg	50	NE	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
alpha-Chlordane	mg/kg	5	60	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
beta-BHC	mg/kg	10	NE	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
Chlordane (Total)	mg/kg	5	60	0.0572	U	---	---	0.0539	U	---	---	0.0623	U	---	---	0.0511
delta-BHC	mg/kg	10	NE	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
Dieldrin	mg/kg	0.08	3	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
Endosulfan I	mg/kg	0.5	1	0.0126	LC, P	---	---	0.0067	U	---	---	0.0185	LC, P	---	---	0.0064
Endosulfan II	mg/kg	0.5	1	0.0077	LC, P	---	---	0.0067	U	---	---	0.0103	LC, P	---	---	0.0064
Endosulfan Sulfate	mg/kg	NE	NE	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
Endrin	mg/kg	10	20	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
Endrin Ketone	mg/kg	NE	NE	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
gamma-BHC (Lindane)	mg/kg	0.003	0.5	0.0014	U	---	---	0.0013	U	---	---	0.0016	U	---	---	0.0013
gamma-Chlordane	mg/kg	5	60	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
Heptachlor	mg/kg	0.3	10	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
Heptachlor Epoxide	mg/kg	0.1	1	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
Hexachlorobenzene	mg/kg	0.7	0.8	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0129
Methoxychlor	mg/kg	200	400	0.0071	U	---	---	0.0067	U	---	---	0.0078	U	---	---	0.0064
Toxaphene	mg/kg	NE	NE	0.357	U	---	---	0.337	U	---	---	0.389	U	---	---	0.32
PCBs																
Aroclor 1016	mg/kg	1	4	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1
Aroclor 1221	mg/kg	1	4	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1
Aroclor 1232	mg/kg	1	4	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1
Aroclor 1242	mg/kg	**1**	**4**	**4.9**	D	---	---	0.6	-	---	---	**2.2**	-	---	---	0.4
Aroclor 1248	mg/kg	1	4	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1
Aroclor 1254	mg/kg	**1**	**4**	**5.3**	D	---	---	1.0	-	---	---	**2.3**	-	---	---	0.8
Aroclor 1260	mg/kg	**1**	4	**1.6**	P, D	---	---	0.3	-	---	---	0.5	-	---	---	0.2
Aroclor 1262	mg/kg	1	4	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1
Aroclor 1268	mg/kg	1	4	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1
Herbicides																
2,4,5-T	mg/kg	100	NE	5.51	U, D	---	---	0.051	U	---	---	0.273	U, D	---	---	0.244
2,4,5-TP (Silvex)	mg/kg	100	NE	5.51	U, D	---	---	0.276	LC, P	---	---	0.273	U, D	---	---	0.244
2,4-D	mg/kg	100	NE	27.3	U, D	---	---	0.470	-	---	---	1.35	U, D	---	---	1.21
2,4-DB	mg/kg	100	NE	27.6	U, D	---	---	0.256	U	---	---	1.36	U, D	---	---	1.22
Dalapon	mg/kg	1000	NE	26.4	U, D	---	---	0.245	U	---	---	1.31	U, D	---	---	1.17
Dicamba	mg/kg	500	NE	5.45	U, D	---	---	0.259	LC, P	---	---	0.27	U, D	---	---	0.242
Dichlorprop	mg/kg	NE	NE	27.3	U, D	---	---	1.55	-	---	---	2.26	LC, P, D	---	---	1.91
Dinoseb	mg/kg	500	NE	27.6	U, D	---	---	0.362	LC, P	---	---	1.36	U, D	---	---	1.22
MCPA	mg/kg	100	NE	67.4	#	---	---	12.5	U	---	---	66.8	U, D	---	---	59.7
MCPP	mg/kg	NE	NE	68.2	#	---	---	12.7	#	---	---	67.5	#	---	---	60.4
Classical Chemistry																
Corrosivity (pH)	S.U.	NE	NE	7.67	-	---	---	7.75	-	---	---	8.08	-	---	---	7.97
Flashpoint	°F	NE	NE	200	>	---	---	200	>	---	---	200	>	---	---	200
Percent Moisture	%	NE	NE	66	-	---	---	64	-	---	---	68	-	---	---	61
Reactive Cyanide	mg/kg	NE	NE	2	U	---	---	2	U	---	---	2	U	---	---	2
Reactive Sulfide	mg/kg	NE	NE	2	U	---	---	2	U	---	---	2	U	---	---	2

Laboratory Sample Designation		2014-RCS1	2014-S3GW3	1709324-01		1709324-02		1709324-03		1709324-04		1709324-05		1709324-06		17093
Sample Designation				SED-C-50 (0-6_0')		SED-G-50 (4_8-6_0')		SED-C-78 (0-3_0')		SED-G-78 (1_2-1_8')		SED-C-79 (0-2_6')		SED-G-79 (1_04-1_56')		SED-C-2
Sample Date				09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																
Soil Type																
Group Designation																
TCLP Metals																
Arsenic	mg/L	NE	NE	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	0.05
Barium	mg/L	NE	NE	0.116	-	---	---	0.079	-	---	---	0.102	-	---	---	0.142
Cadmium	mg/L	NE	NE	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01
Chromium	mg/L	NE	NE	0.024	-	---	---	0.02	U	---	---	0.02	U	---	---	0.02
Lead	mg/L	NE	NE	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	0.05
Mercury	mg/L	NE	NE	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0025
Selenium	mg/L	NE	NE	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1
Silver	mg/L	NE	NE	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01

Laboratory Sample Designation		2014-RCS1	24-07	1709324-08		1709324-09		1709324-10		1709324-11		1709324-12		1709324-13		1709324-14	
Sample Designation			7 (0-5_6')	SED-G-27 (0-1_12')		SED-C-26 (0-6_0')		SED-G-26 (1_2-2_4')		SED-C-52 (0-6_3')		SED-G-52 (5_04-6_3')		SED-C-56 (0-5_2')		SED-G-56 (4_16-5_2')	
Sample Date			/2017	09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
VOCs - Low																	
1,1,1,2-Tetrachloroethane	mg/kg	0.1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,1,1-Trichloroethane	mg/kg	30	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,1,2,2-Tetrachloroethane	mg/kg	**0.005**	---	0.004	U	---	---	0.004	U	---	---	**0.0072**	U	---	---	**0.0083**	U
1,1,2-Trichloroethane	mg/kg	0.1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,1-Dichloroethane	mg/kg	0.4	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,1-Dichloroethene	mg/kg	3	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,1-Dichloropropene	mg/kg	NE	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,2,3-Trichlorobenzene	mg/kg	NE	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,2,3-Trichloropropane	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,2,4-Trichlorobenzene	mg/kg	2	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,2,4-Trimethylbenzene	mg/kg	1000	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,2-Dibromo-3-Chloropropane	mg/kg	10	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,2-Dibromoethane	mg/kg	0.1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,2-Dichlorobenzene	mg/kg	9	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,2-Dichloroethane	mg/kg	0.1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,2-Dichloropropane	mg/kg	0.1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,3,5-Trimethylbenzene	mg/kg	10	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,3-Dichlorobenzene	mg/kg	3	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,3-Dichloropropane	mg/kg	500	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,4-Dichlorobenzene	mg/kg	0.7	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
1,4-Dioxane	mg/kg	**0.2**	---	**0.201**	U	---	---	0.199	U	---	---	**0.362**	U	---	---	**0.413**	U
2,2-Dichloropropane	mg/kg	NE	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
2-Butanone	mg/kg	4	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
2-Chlorotoluene	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
2-Hexanone	mg/kg	100	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
4-Chlorotoluene	mg/kg	NE	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
4-Isopropyltoluene	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
4-Methyl-2-Pentanone	mg/kg	0.4	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
Acetone	mg/kg	6	---	0.120	-	---	---	0.0557	-	---	---	0.0757	-	---	---	0.104	-
Benzene	mg/kg	2	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Bromobenzene	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Bromochloromethane	mg/kg	NE	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Bromodichloromethane	mg/kg	0.1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Bromoform	mg/kg	0.1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Bromomethane	mg/kg	0.5	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
Carbon Disulfide	mg/kg	100	---	0.0290	-	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Carbon Tetrachloride	mg/kg	5	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Chlorobenzene	mg/kg	1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Chloroethane	mg/kg	100	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
Chloroform	mg/kg	0.2	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Chloromethane	mg/kg	100	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
cis-1,2-Dichloroethene	mg/kg	0.1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
cis-1,3-Dichloropropene	mg/kg	**0.01**	---	0.01	U	---	---	0.0099	U	---	---	**0.0181**	U	---	---	**0.0207**	U
Dibromochloromethane	mg/kg	**0.005**	---	0.004	U	---	---	0.004	U	---	---	**0.0072**	U	---	---	**0.0083**	U
Dibromomethane	mg/kg	500	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Dichlorodifluoromethane	mg/kg	1000	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
Diethyl Ether	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0467	-	---	---	0.0777	-
Di-isopropyl ether	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U

Laboratory Sample Designation		2014-RCS1	24-07	1709324-08		1709324-09		1709324-10		1709324-11		1709324-12		1709324-13		1709324-14	
Sample Designation			7 (0-5_6')	SED-G-27 (0-1_12')		SED-C-26 (0-6_0')		SED-G-26 (1_2-2_4')		SED-C-52 (0-6_3')		SED-G-52 (5_04-6_3')		SED-C-56 (0-5_2')		SED-G-56 (4_16-5_2')	
Sample Date			/2017	09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Ethyl tertiary-butyl ether	mg/kg	NE	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Ethylbenzene	mg/kg	40	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Hexachlorobutadiene	mg/kg	30	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Isopropylbenzene	mg/kg	1000	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Methyl tert-Butyl Ether	mg/kg	0.1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Methylene Chloride	mg/kg	0.1	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
Naphthalene	mg/kg	4	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
n-Butylbenzene	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
n-Propylbenzene	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
sec-Butylbenzene	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Styrene	mg/kg	3	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
tert-Butylbenzene	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Tertiary-amyl methyl ether	mg/kg	NE	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Tetrachloroethene	mg/kg	1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Tetrahydrofuran	mg/kg	500	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Toluene	mg/kg	30	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
trans-1,2-Dichloroethene	mg/kg	1	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
trans-1,3-Dichloropropene	mg/kg	**0.01**	---	0.01	U	---	---	0.0099	U	---	---	**0.0181**	U	---	---	**0.0207**	U
Trichloroethene	mg/kg	0.3	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Trichlorofluoromethane	mg/kg	1000	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Vinyl Chloride	mg/kg	0.7	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
Xylene O	mg/kg	100	---	0.01	U	---	---	0.0099	U	---	---	0.0181	U	---	---	0.0207	U
Xylene P,M	mg/kg	100	---	0.0201	U	---	---	0.0199	U	---	---	0.0362	U	---	---	0.0413	U
Xylenes (Total)	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																	
1,2,4-Trichlorobenzene	mg/kg	2	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
1,2-Dichlorobenzene	mg/kg	9	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
1,3-Dichlorobenzene	mg/kg	3	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
1,4-Dichlorobenzene	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
2,4,5-Trichlorophenol	mg/kg	4	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
2,4,6-Trichlorophenol	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
2,4-Dichlorophenol	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
2,4-Dimethylphenol	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
2,4-Dinitrophenol	mg/kg	3	U	---	---	1.62	U	---	---	1.58	U	---	---	1.92	U	---	---
2,4-Dinitrotoluene	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
2,6-Dinitrotoluene	mg/kg	100	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
2-Chloronaphthalene	mg/kg	1000	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
2-Chlorophenol	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
2-Methylnaphthalene	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
2-Methylphenol	mg/kg	500	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
2-Nitrophenol	mg/kg	100	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
3,3´-Dichlorobenzidine	mg/kg	3	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
3+4-Methylphenol	mg/kg	500	U	---	---	1.62	U	---	---	1.58	U	---	---	1.92	U	---	---
4-Bromophenyl-phenylether	mg/kg	100	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
4-Chloroaniline	mg/kg	1	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
4-Nitrophenol	mg/kg	100	U	---	---	4.07	U	---	---	3.96	U	---	---	4.8	U	---	---
Acenaphthene	mg/kg	4	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Acenaphthylene	mg/kg	1	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Acetophenone	mg/kg	1000	U	---	---	1.62	U	---	---	1.58	U	---	---	1.92	U	---	---

Laboratory Sample Designation		2014-RCS1	24-07	1709324-08		1709324-09		1709324-10		1709324-11		1709324-12		1709324-13		1709324-14	
Sample Designation			7 (0-5_6')	SED-G-27 (0-1_12')		SED-C-26 (0-6_0')		SED-G-26 (1_2-2_4')		SED-C-52 (0-6_3')		SED-G-52 (5_04-6_3')		SED-C-56 (0-5_2')		SED-G-56 (4_16-5_2')	
Sample Date			/2017	09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Aniline	mg/kg	1000	U	---	---	4.07	U	---	---	3.96	U	---	---	4.8	U	---	---
Anthracene	mg/kg	1000	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Azobenzene	mg/kg	50	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Benzo(a)anthracene	mg/kg	7	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Benzo(a)pyrene	mg/kg	2	U	---	---	0.532	-	---	---	0.396	U	---	---	0.48	U	---	---
Benzo(b)fluoranthene	mg/kg	7	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Benzo(g,h,i)perylene	mg/kg	1000	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Benzo(k)fluoranthene	mg/kg	70	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
bis(2-Chloroethoxy)methane	mg/kg	500	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
bis(2-Chloroethyl)ether	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
bis(2-chloroisopropyl)Ether	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	**90**	D	---	---	**293**	D	---	---	52.0	D	---	---	**140**	D	---	---
Butylbenzylphthalate	mg/kg	100	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Chrysene	mg/kg	70	U	---	---	0.641	-	---	---	0.396	U	---	---	0.48	U	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
Dibenzofuran	mg/kg	100	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Diethylphthalate	mg/kg	10	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Dimethylphthalate	mg/kg	**0.7**	U	---	---	**0.811**	U	---	---	**0.789**	U	---	---	**0.958**	U	---	---
Di-n-butylphthalate	mg/kg	50	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Di-n-octylphthalate	mg/kg	1000	-	---	---	19.8	-	---	---	5.64	-	---	---	39.2	D	---	---
Fluoranthene	mg/kg	1000	U	---	---	1.53	-	---	---	0.789	U	---	---	0.958	U	---	---
Fluorene	mg/kg	1000	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Hexachlorobenzene	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
Hexachlorobutadiene	mg/kg	30	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Hexachloroethane	mg/kg	0.7	U	---	---	0.407	U	---	---	0.396	U	---	---	0.48	U	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	7	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Isophorone	mg/kg	100	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Naphthalene	mg/kg	4	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Nitrobenzene	mg/kg	500	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
N-Nitrosodimethylamine	mg/kg	50	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Pentachlorophenol	mg/kg	3	U	---	---	1.62	U	---	---	1.58	U	---	---	1.92	U	---	---
Phenanthrene	mg/kg	10	U	---	---	0.814	-	---	---	0.789	U	---	---	0.958	U	---	---
Phenol	mg/kg	1	U	---	---	0.811	U	---	---	0.789	U	---	---	0.958	U	---	---
Pyrene	mg/kg	1000	U	---	---	1.01	-	---	---	0.789	U	---	---	0.958	U	---	---
Pyridine	mg/kg	NE	U	---	---	4.07	U	---	---	3.96	U	---	---	4.8	U	---	---
Total Metals																	
Arsenic	mg/kg	**20**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	70	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	**200**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																	
4,4´-DDD	mg/kg	8	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
4,4´-DDE	mg/kg	6	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
4,4´-DDT	mg/kg	6	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---

Laboratory Sample Designation		2014-RCS1	24-07	1709324-08		1709324-09		1709324-10		1709324-11		1709324-12		1709324-13		1709324-14	
Sample Designation			7 (0-5_6')	SED-G-27 (0-1_12')		SED-C-26 (0-6_0')		SED-G-26 (1_2-2_4')		SED-C-52 (0-6_3')		SED-G-52 (5_04-6_3')		SED-C-56 (0-5_2')		SED-G-56 (4_16-5_2')	
Sample Date			/2017	09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Aldrin	mg/kg	0.08	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
alpha-BHC	mg/kg	50	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
alpha-Chlordane	mg/kg	5	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
beta-BHC	mg/kg	10	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Chlordane (Total)	mg/kg	5	U	---	---	0.0486	U	---	---	0.0494	U	---	---	0.0597	U	---	---
delta-BHC	mg/kg	10	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Dieldrin	mg/kg	0.08	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Endosulfan I	mg/kg	0.5	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Endosulfan II	mg/kg	0.5	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0091	LC, P	---	---
Endosulfan Sulfate	mg/kg	NE	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Endrin	mg/kg	10	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Endrin Ketone	mg/kg	NE	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
gamma-BHC (Lindane)	mg/kg	0.003	U	---	---	0.0012	U	---	---	0.0012	U	---	---	0.0015	U	---	---
gamma-Chlordane	mg/kg	5	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Heptachlor	mg/kg	0.3	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Heptachlor Epoxide	mg/kg	0.1	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Hexachlorobenzene	mg/kg	0.7	LC, P	---	---	0.0093	LC, P	---	---	0.0062	U	---	---	0.0075	U	---	---
Methoxychlor	mg/kg	200	U	---	---	0.0061	U	---	---	0.0062	U	---	---	0.0075	U	---	---
Toxaphene	mg/kg	NE	U	---	---	0.303	U	---	---	0.309	U	---	---	0.373	U	---	---
PCBs																	
Aroclor 1016	mg/kg	1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---
Aroclor 1221	mg/kg	1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---
Aroclor 1232	mg/kg	1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---
Aroclor 1242	mg/kg	**1**	-	---	---	0.9	-	---	---	0.7	-	---	---	**2.6**	P, D	---	---
Aroclor 1248	mg/kg	1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---
Aroclor 1254	mg/kg	**1**	-	---	---	**1.4**	-	---	---	**1.5**	-	---	---	**2.9**	P, D	---	---
Aroclor 1260	mg/kg	**1**	-	---	---	0.4	-	---	---	0.6	-	---	---	**1.1**	P, D	---	---
Aroclor 1262	mg/kg	1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---
Aroclor 1268	mg/kg	1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---
Herbicides																	
2,4,5-T	mg/kg	100	U, D	---	---	0.233	U, D	---	---	0.242	U, D	---	---	0.266	U, D	---	---
2,4,5-TP (Silvex)	mg/kg	100	U, D	---	---	0.233	U, D	---	---	0.242	U, D	---	---	0.266	U, D	---	---
2,4-D	mg/kg	100	U, D	---	---	1.15	U, D	---	---	1.2	U, D	---	---	1.32	U, D	---	---
2,4-DB	mg/kg	100	U, D	---	---	1.16	U, D	---	---	1.21	U, D	---	---	1.33	U, D	---	---
Dalapon	mg/kg	1000	U, D	---	---	1.12	U, D	---	---	1.16	U, D	---	---	1.28	U, D	---	---
Dicamba	mg/kg	500	LC, P, D	---	---	0.23	U, D	---	---	0.239	U, D	---	---	0.264	U, D	---	---
Dichlorprop	mg/kg	NE	LC, P, D	---	---	1.15	U, D	---	---	1.2	U, D	---	---	1.32	U, D	---	---
Dinoseb	mg/kg	500	U, D	---	---	1.16	U, D	---	---	1.21	U, D	---	---	1.33	U, D	---	---
MCPA	mg/kg	100	U, D	---	---	57	U, D	---	---	59.2	U, D	---	---	65.2	U, D	---	---
MCPP	mg/kg	NE	#	---	---	57.6	#	---	---	59.9	#	---	---	65.9	#	---	---
Classical Chemistry																	
Corrosivity (pH)	S.U.	NE	-	---	---	7.91	-	---	---	7.57	-	---	---	7.35	-	---	---
Flashpoint	°F	NE	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---
Percent Moisture	%	NE	-	---	---	59	-	---	---	60	-	---	---	67	-	---	---
Reactive Cyanide	mg/kg	NE	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---
Reactive Sulfide	mg/kg	NE	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---

Laboratory Sample Designation		2014-RCS1	24-07	1709324-08		1709324-09		1709324-10		1709324-11		1709324-12		1709324-13		1709324-14	
Sample Designation			7 (0-5_6')	SED-G-27 (0-1_12')		SED-C-26 (0-6_0')		SED-G-26 (1_2-2_4')		SED-C-52 (0-6_3')		SED-G-52 (5_04-6_3')		SED-C-56 (0-5_2')		SED-G-56 (4_16-5_2')	
Sample Date			/2017	09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
TCLP Metals																	
Arsenic	mg/L	NE	U	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---
Barium	mg/L	NE	-	---	---	0.059	-	---	---	0.110	-	---	---	0.131	-	---	---
Cadmium	mg/L	NE	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---
Chromium	mg/L	NE	U	---	---	0.024	-	---	---	0.02	U	---	---	0.031	-	---	---
Lead	mg/L	NE	U	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---
Mercury	mg/L	NE	U, D	---	---	0.0025	U, D	---	---	0.0025	U, D	---	---	0.0025	U, D	---	---
Selenium	mg/L	NE	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---
Silver	mg/L	NE	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---

Laboratory Sample Designation		2014-RCS1	1709324-15		1709324-16		1709324-17		1709324-18		1709324-19		1709324-20		1709324-21		1709
Sample Designation			SED-C-55 (0-5_9')		SED-G-55 (4_72-5_9')		SED-C-64 (0-3_8')		SED-G-64 (2_28-3_04')		Trip Blank 2		SED-C-50 (0-6_0') - Dried		SED-C-78 (0-3_0') - Dried		SED-C-79 (0
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																	
Soil Type																	
Group Designation																	
VOCs - Low																	
1,1,1,2-Tetrachloroethane	mg/kg	0.1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	30	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	**0.005**	---	---	0.0046	U	---	---	**0.0052**	U	0.002	U	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	0.1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,1-Dichloroethane	mg/kg	0.4	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,1-Dichloroethene	mg/kg	3	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,1-Dichloropropene	mg/kg	NE	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	NE	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	2	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	1000	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	10	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,2-Dibromoethane	mg/kg	0.1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	9	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,2-Dichloroethane	mg/kg	0.1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,2-Dichloropropane	mg/kg	0.1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	10	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	3	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,3-Dichloropropane	mg/kg	500	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.7	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
1,4-Dioxane	mg/kg	**0.2**	---	---	**0.23**	U	---	---	**0.259**	U	0.1	U	---	---	---	---	---
2,2-Dichloropropane	mg/kg	NE	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
2-Butanone	mg/kg	4	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
2-Chlorotoluene	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
2-Hexanone	mg/kg	100	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
4-Chlorotoluene	mg/kg	NE	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
4-Isopropyltoluene	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	0.4	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
Acetone	mg/kg	6	---	---	0.120	-	---	---	0.137	-	0.0156	-	---	---	---	---	---
Benzene	mg/kg	2	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Bromobenzene	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Bromochloromethane	mg/kg	NE	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Bromodichloromethane	mg/kg	0.1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Bromoform	mg/kg	0.1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Bromomethane	mg/kg	0.5	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
Carbon Disulfide	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Carbon Tetrachloride	mg/kg	5	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Chlorobenzene	mg/kg	1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Chloroethane	mg/kg	100	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
Chloroform	mg/kg	0.2	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Chloromethane	mg/kg	100	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	0.1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	**0.01**	---	---	**0.0115**	U	---	---	**0.013**	U	0.005	U	---	---	---	---	---
Dibromochloromethane	mg/kg	**0.005**	---	---	0.0046	U	---	---	**0.0052**	U	0.002	U	---	---	---	---	---
Dibromomethane	mg/kg	500	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	1000	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
Diethyl Ether	mg/kg	100	---	---	0.0217	-	---	---	0.0152	-	0.005	U	---	---	---	---	---
Di-isopropyl ether	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	1709324-15		1709324-16		1709324-17		1709324-18		1709324-19		1709324-20		1709324-21		1709324
Sample Designation			SED-C-55 (0-5_9')		SED-G-55 (4_72-5_9')		SED-C-64 (0-3_8')		SED-G-64 (2_28-3_04')		Trip Blank 2		SED-C-50 (0-6_0') - Dried		SED-C-78 (0-3_0') - Dried		SED-C-79 (0
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																	
Soil Type																	
Group Designation																	
Ethyl tertiary-butyl ether	mg/kg	NE	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Ethylbenzene	mg/kg	40	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Hexachlorobutadiene	mg/kg	30	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Isopropylbenzene	mg/kg	1000	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	0.1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Methylene Chloride	mg/kg	0.1	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
Naphthalene	mg/kg	4	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
n-Butylbenzene	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
n-Propylbenzene	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
sec-Butylbenzene	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Styrene	mg/kg	3	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
tert-Butylbenzene	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	NE	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Tetrachloroethene	mg/kg	1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Tetrahydrofuran	mg/kg	500	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Toluene	mg/kg	30	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	1	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	**0.01**	---	---	**0.0115**	U	---	---	**0.013**	U	0.005	U	---	---	---	---	---
Trichloroethene	mg/kg	0.3	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Trichlorofluoromethane	mg/kg	1000	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Vinyl Chloride	mg/kg	0.7	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
Xylene O	mg/kg	100	---	---	0.0115	U	---	---	0.013	U	0.005	U	---	---	---	---	---
Xylene P,M	mg/kg	100	---	---	0.023	U	---	---	0.0259	U	0.01	U	---	---	---	---	---
Xylenes (Total)	mg/kg	100	---	---	---	---	---	---	---	---	0.0075	U	---	---	---	---	---
SVOCs																	
1,2,4-Trichlorobenzene	mg/kg	2	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	9	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	3	0.912	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	4	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	3	1.83	U	---	---	2.06	U	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	100	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	1000	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	500	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	100	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	3	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	500	1.83	U	---	---	2.06	U	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	100	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	1	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	100	4.58	U	---	---	5.16	U	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	4	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	1	0.912	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	1000	1.83	U	---	---	2.06	U	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	1709324-15		1709324-16		1709324-17		1709324-18		1709324-19		1709324-20		1709324-21		1709324
Sample Designation			SED-C-55 (0-5_9')		SED-G-55 (4_72-5_9')		SED-C-64 (0-3_8')		SED-G-64 (2_28-3_04')		Trip Blank 2		SED-C-50 (0-6_0') - Dried		SED-C-78 (0-3_0') - Dried		SED-C-79 (0
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																	
Soil Type																	
Group Designation																	
Aniline	mg/kg	1000	4.58	U	---	---	5.16	U	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	1000	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	50	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	7	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	2	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	7	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	1000	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	70	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	500	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	**90**	**109**	D	---	---	**423**	D	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	100	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	70	0.458	-	---	---	0.516	U	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	100	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	10	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	**0.7**	**0.912**	U	---	---	**1.03**	U	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	50	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	1000	12.3	-	---	---	43.7	D	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	1000	1.07	-	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	1000	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	30	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	0.7	0.458	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	7	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	100	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	4	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	500	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	50	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	3	1.83	U	---	---	2.06	U	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	10	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	1	0.912	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	1000	0.912	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	NE	4.58	U	---	---	5.16	U	---	---	---	---	---	---	---	---	---
Total Metals																	
Arsenic	mg/kg	**20**	---	---	---	---	---	---	---	---	---	---	**115**	-	**88.4**	-	**69.8**
Barium	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	74.3	-	77.0	-	67.5
Cadmium	mg/kg	70	---	---	---	---	---	---	---	---	---	---	3.16	-	1.86	-	1.94
Chromium	mg/kg	**100**	---	---	---	---	---	---	---	---	---	---	**124**	-	**104**	-	99.2
Lead	mg/kg	**200**	---	---	---	---	---	---	---	---	---	---	**487**	-	**302**	-	**296**
Mercury	mg/kg	20	---	---	---	---	---	---	---	---	---	---	2.78	D	1.29	D	1.38
Selenium	mg/kg	400	---	---	---	---	---	---	---	---	---	---	6.76	D	3.83	D	4.18
Silver	mg/kg	100	---	---	---	---	---	---	---	---	---	---	2.86	-	1.95	-	1.57
Pesticides																	
4,4´-DDD	mg/kg	8	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	6	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	6	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	1709324-15		1709324-16		1709324-17		1709324-18		1709324-19		1709324-20		1709324-21		1709
Sample Designation			SED-C-55 (0-5_9')		SED-G-55 (4_72-5_9')		SED-C-64 (0-3_8')		SED-G-64 (2_28-3_04')		Trip Blank 2		SED-C-50 (0-6_0') - Dried		SED-C-78 (0-3_0') - Dried		SED-C-79 (0
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																	
Soil Type																	
Group Designation																	
Aldrin	mg/kg	0.08	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	50	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	5	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	10	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	5	0.0549	U	---	---	0.0636	U	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	10	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	0.08	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	0.5	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	0.5	0.0069	U	---	---	0.0086	LC, P	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	NE	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	10	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	NE	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	0.003	0.0014	U	---	---	0.0016	U	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	5	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	0.3	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	0.1	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	0.7	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	200	0.0069	U	---	---	0.008	U	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	NE	0.343	U	---	---	0.398	U	---	---	---	---	---	---	---	---	---
PCBs																	
Aroclor 1016	mg/kg	1	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	1	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	1	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	**1**	0.7	-	---	---	0.4	-	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	1	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	**1**	**1.3**	-	---	---	0.8	-	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	**1**	0.4	-	---	---	0.2	-	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	1	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	1	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---
Herbicides																	
2,4,5-T	mg/kg	100	0.257	U, D	---	---	0.293	U, D	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	100	0.257	U, D	---	---	0.305	LC, P, D	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	100	1.27	U, D	---	---	1.45	U, D	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	100	1.28	U, D	---	---	1.47	U, D	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	1000	1.23	U, D	---	---	1.41	U, D	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	500	0.254	U, D	---	---	0.29	U, D	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	NE	1.27	U, D	---	---	1.45	U, D	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	500	1.28	U, D	---	---	1.47	U, D	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	100	62.9	U, D	---	---	71.8	U, D	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	NE	63.5	#	---	---	72.6	#	---	---	---	---	---	---	---	---	---
Classical Chemistry																	
Corrosivity (pH)	S.U.	NE	7.54	-	---	---	7.22	-	---	---	---	---	---	---	---	---	---
Flashpoint	°F	NE	200	>	---	---	200	>	---	---	---	---	---	---	---	---	---
Percent Moisture	%	NE	64	-	---	---	69	-	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	NE	2	U	---	---	2	U	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	NE	2	U	---	---	2	U	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	1709324-15		1709324-16		1709324-17		1709324-18		1709324-19		1709324-20		1709324-21		1709
Sample Designation			SED-C-55 (0-5_9')		SED-G-55 (4_72-5_9')		SED-C-64 (0-3_8')		SED-G-64 (2_28-3_04')		Trip Blank 2		SED-C-50 (0-6_0') - Dried		SED-C-78 (0-3_0') - Dried		SED-C-79 (0
Sample Date			09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13
Sample Depth																	
Soil Type																	
Group Designation																	
TCLP Metals																	
Arsenic	mg/L	NE	0.05	U	---	---	0.109	-	---	---	---	---	---	---	---	---	---
Barium	mg/L	NE	0.084	-	---	---	0.098	-	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	NE	0.01	U	---	---	0.01	U	---	---	---	---	---	---	---	---	---
Chromium	mg/L	NE	0.024	-	---	---	0.082	-	---	---	---	---	---	---	---	---	---
Lead	mg/L	NE	0.05	U	---	---	0.289	-	---	---	---	---	---	---	---	---	---
Mercury	mg/L	NE	0.0025	U, D	---	---	0.0025	U, D	---	---	---	---	---	---	---	---	---
Selenium	mg/L	NE	0.1	U	---	---	0.1	U	---	---	---	---	---	---	---	---	---
Silver	mg/L	NE	0.01	U	---	---	0.01	U	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	24-22	1709324-23	1709324-24	1709324-25	1709324-26	1709324-27	1709324-28
Sample Designation			-2_6') - Dried	SED-C-27 (0-5_6') - Dried	SED-C-26 (0-6_0') - Dried	SED-C-52 (0-6_3') - Dried	SED-C-56 (0-5_2') - Dried	SED-C-55 (0-5_9') - Dried	SED-C-64 (0-3_8') - Dried
Sample Date			/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017
Sample Depth									
Soil Type									
Group Designation									
VOCs - Low									
1,1,1,2-Tetrachloroethane	mg/kg	0.1	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	30	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	**0.005**	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	0.1	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	0.4	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	3	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	NE	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	NE	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	100	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	2	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	1000	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	10	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	0.1	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	9	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	0.1	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	0.1	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	10	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	3	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	500	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.7	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	**0.2**	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	NE	---	---	---	---	---	---	---
2-Butanone	mg/kg	4	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	100	---	---	---	---	---	---	---
2-Hexanone	mg/kg	100	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	NE	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	100	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	0.4	---	---	---	---	---	---	---
Acetone	mg/kg	6	---	---	---	---	---	---	---
Benzene	mg/kg	2	---	---	---	---	---	---	---
Bromobenzene	mg/kg	100	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	NE	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	0.1	---	---	---	---	---	---	---
Bromoform	mg/kg	0.1	---	---	---	---	---	---	---
Bromomethane	mg/kg	0.5	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	100	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	5	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	1	---	---	---	---	---	---	---
Chloroethane	mg/kg	100	---	---	---	---	---	---	---
Chloroform	mg/kg	0.2	---	---	---	---	---	---	---
Chloromethane	mg/kg	100	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	0.1	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	**0.01**	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	**0.005**	---	---	---	---	---	---	---
Dibromomethane	mg/kg	500	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	1000	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	100	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	100	---	---	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	24-22	1709324-23	1709324-24	1709324-25	1709324-26	1709324-27	1709324-28						
Sample Designation			-2_6') - Dried	SED-C-27 (0-5_6') - Dried	SED-C-26 (0-6_0') - Dried	SED-C-52 (0-6_3') - Dried	SED-C-56 (0-5_2') - Dried	SED-C-55 (0-5_9') - Dried	SED-C-64 (0-3_8') - Dried						
Sample Date			/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017						
Sample Depth															
Soil Type															
Group Designation															
Ethyl tertiary-butyl ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	40	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	30	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	4	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	3	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	500	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	30	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	**0.01**	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylenes (Total)	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs															
1,2,4-Trichlorobenzene	mg/kg	2	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	9	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	3	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	4	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	3	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	500	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	3	---	---	---	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	500	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	4	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	24-22	1709324-23		1709324-24		1709324-25		1709324-26		1709324-27		1709324-28	
Sample Designation			-2_6') - Dried	SED-C-27 (0-5_6') - Dried		SED-C-26 (0-6_0') - Dried		SED-C-52 (0-6_3') - Dried		SED-C-56 (0-5_2') - Dried		SED-C-55 (0-5_9') - Dried		SED-C-64 (0-3_8') - Dried	
Sample Date			/2017	09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017		09/13/2017	
Sample Depth															
Soil Type															
Group Designation															
Aniline	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	50	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	7	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	2	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	7	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	70	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	500	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	**90**	---	---	---	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	70	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	**0.7**	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	50	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	30	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	7	---	---	---	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	4	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	500	---	---	---	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	50	---	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	3	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Metals															
Arsenic	mg/kg	**20**	-	**103**	-	**113**	-	**166**	-	**143**	-	**143**	-	**102**	-
Barium	mg/kg	1000	-	75.4	-	69.8	-	95.0	-	81.0	-	78.7	-	59.1	-
Cadmium	mg/kg	70	-	1.99	-	2.36	-	2.66	-	3.71	-	3.89	-	2.34	-
Chromium	mg/kg	**100**	-	**101**	-	**109**	-	**102**	-	**132**	-	**136**	-	**117**	-
Lead	mg/kg	**200**	-	**500**	-	**489**	-	**624**	-	**528**	-	**516**	-	**314**	-
Mercury	mg/kg	20	D	2.07	D	2.01	D	2.87	D	2.72	D	1.33	D	0.997	D
Selenium	mg/kg	400	D	7.90	D	6.81	D	6.92	D	5.94	D	5.73	D	3.61	D
Silver	mg/kg	100	-	1.66	-	1.95	-	1.98	-	2.87	-	2.85	-	2.21	-
Pesticides															
4,4´-DDD	mg/kg	8	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	6	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	6	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	24-22	1709324-23	1709324-24	1709324-25	1709324-26	1709324-27	1709324-28						
Sample Designation			-2_6') - Dried	SED-C-27 (0-5_6') - Dried	SED-C-26 (0-6_0') - Dried	SED-C-52 (0-6_3') - Dried	SED-C-56 (0-5_2') - Dried	SED-C-55 (0-5_9') - Dried	SED-C-64 (0-3_8') - Dried						
Sample Date			/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017						
Sample Depth															
Soil Type															
Group Designation															
Aldrin	mg/kg	0.08	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	50	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	5	---	---	---	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	5	---	---	---	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	0.08	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	10	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	0.003	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	5	---	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	200	---	---	---	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
PCBs															
Aroclor 1016	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Herbicides															
2,4,5-T	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	500	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	500	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	100	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Classical Chemistry															
Corrosivity (pH)	S.U.	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	NE	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		2014-RCS1	24-22	1709324-23	1709324-24	1709324-25	1709324-26	1709324-27	1709324-28
Sample Designation			-2_6') - Dried	SED-C-27 (0-5_6') - Dried	SED-C-26 (0-6_0') - Dried	SED-C-52 (0-6_3') - Dried	SED-C-56 (0-5_2') - Dried	SED-C-55 (0-5_9') - Dried	SED-C-64 (0-3_8') - Dried
Sample Date			/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017
Sample Depth									
Soil Type									
Group Designation									
TCLP Metals									
Arsenic	mg/L	NE	---	---	---	---	---	---	---
Barium	mg/L	NE	---	---	---	---	---	---	---
Cadmium	mg/L	NE	---	---	---	---	---	---	---
Chromium	mg/L	NE	---	---	---	---	---	---	---
Lead	mg/L	NE	---	---	---	---	---	---	---
Mercury	mg/L	NE	---	---	---	---	---	---	---
Selenium	mg/L	NE	---	---	---	---	---	---	---
Silver	mg/L	NE	---	---	---	---	---	---	---

Laboratory Sample Designation		1709418-01		1709418-02		1709418-03		1709418-04		1709418-05		1709418-06		1709418-07		1709418-08	
Sample Designation		SED-G-20 (1_68-2_1')		SED-G-13 (1_2-1_8')		SED-G-21 (1_4-2_1')		SED-G-19 (1_36-1_7')		SED-G-DUP-1		SED-G-28 (2_36-3_54')		SED-G-25 (2_8-3_5')		SED-C-51 (0-5_3')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
VOCs - Low																	
1,1,1,2-Tetrachloroethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,1,1-Trichloroethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,1,2,2-Tetrachloroethane	mg/kg	0.0028	U	**0.0065**	U	0.0039	U	0.0044	U	0.0043	U	**0.0053**	U	**0.0084**	U	---	---
1,1,2-Trichloroethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,1-Dichloroethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,1-Dichloroethene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,1-Dichloropropene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,2,3-Trichlorobenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,2,3-Trichloropropane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,2,4-Trichlorobenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,2,4-Trimethylbenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,2-Dibromoethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,2-Dichlorobenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.213	-	---	---
1,2-Dichloroethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,2-Dichloropropane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,3,5-Trimethylbenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,3-Dichlorobenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,3-Dichloropropane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,4-Dichlorobenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
1,4-Dioxane	mg/kg	0.141	U	**0.326**	U	0.196	U	**0.222**	U	**0.217**	U	**0.267**	U	**0.42**	U	---	---
2,2-Dichloropropane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
2-Butanone	mg/kg	0.0141	U	0.0343	-	0.0196	U	0.0222	U	0.0217	U	0.0429	-	0.042	U	---	---
2-Chlorotoluene	mg/kg	0.007	U	0.0304	-	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.215	-	---	---
2-Hexanone	mg/kg	0.0141	U	0.0326	U	0.0196	U	0.0222	U	0.0217	U	0.0267	U	0.042	U	---	---
4-Chlorotoluene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.0410	-	---	---
4-Isopropyltoluene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
4-Methyl-2-Pentanone	mg/kg	0.0141	U	0.0326	U	0.0196	U	0.0222	U	0.0217	U	0.0267	U	0.042	U	---	---
Acetone	mg/kg	0.0492	-	0.224	-	0.118	-	0.0563	-	0.0629	-	0.291	-	0.189	-	---	---
Benzene	mg/kg	0.007	U	0.0175	-	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.0210	-	---	---
Bromobenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Bromochloromethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Bromodichloromethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Bromoform	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Bromomethane	mg/kg	0.0141	U	0.0326	U	0.0196	U	0.0222	U	0.0217	U	0.0267	U	0.042	U	---	---
Carbon Disulfide	mg/kg	0.0251	-	0.0417	-	0.0227	-	0.0143	-	0.0109	U	0.0146	-	0.0445	-	---	---
Carbon Tetrachloride	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Chlorobenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0304	-	0.433	-	---	---
Chloroethane	mg/kg	0.0141	U	0.0326	U	0.0196	U	0.0222	U	0.0217	U	0.0267	U	0.042	U	---	---
Chloroform	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Chloromethane	mg/kg	0.0141	U	0.0326	U	0.0196	U	0.0222	U	0.0217	U	0.0267	U	0.042	U	---	---
cis-1,2-Dichloroethene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---

Laboratory Sample Designation		1709418-01		1709418-02		1709418-03		1709418-04		1709418-05		1709418-06		1709418-07		1709418-08	
Sample Designation		SED-G-20 (1_68-2_1')		SED-G-13 (1_2-1_8')		SED-G-21 (1_4-2_1')		SED-G-19 (1_36-1_7')		SED-G-DUP-1		SED-G-28 (2_36-3_54')		SED-G-25 (2_8-3_5')		SED-C-51 (0-5_3')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
cis-1,3-Dichloropropene	mg/kg	0.007	U	**0.0163**	U	0.0098	U	**0.0111**	U	**0.0109**	U	**0.0133**	U	**0.021**	U	---	---
Dibromochloromethane	mg/kg	0.0028	U	**0.0065**	U	0.0039	U	0.0044	U	0.0043	U	**0.0053**	U	**0.0084**	U	---	---
Dibromomethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Dichlorodifluoromethane	mg/kg	0.0141	U	0.0326	U	0.0196	U	0.0222	U	0.0217	U	0.0267	U	0.042	U	---	---
Diethyl Ether	mg/kg	0.007	U	0.0179	-	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.0282	-	---	---
Di-isopropyl ether	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Ethyl tertiary-butyl ether	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Ethylbenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.0298	-	---	---
Hexachlorobutadiene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Isopropylbenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Methyl tert-Butyl Ether	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Methylene Chloride	mg/kg	0.0141	U	0.0326	U	0.0196	U	0.0222	U	0.0217	U	0.0267	U	0.042	U	---	---
Naphthalene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.0280	-	---	---
n-Butylbenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.0265	-	---	---
n-Propylbenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
sec-Butylbenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Styrene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
tert-Butylbenzene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Tertiary-amyl methyl ether	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Tetrachloroethene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Tetrahydrofuran	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Toluene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
trans-1,2-Dichloroethene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
trans-1,3-Dichloropropene	mg/kg	0.007	U	**0.0163**	U	0.0098	U	**0.0111**	U	**0.0109**	U	**0.0133**	U	**0.021**	U	---	---
Trichloroethene	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Trichlorofluoromethane	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.021	U	---	---
Vinyl Chloride	mg/kg	0.0141	U	0.0326	U	0.0196	U	0.0222	U	0.0217	U	0.0267	U	0.042	U	---	---
Xylene O	mg/kg	0.007	U	0.0163	U	0.0098	U	0.0111	U	0.0109	U	0.0133	U	0.0540	-	---	---
Xylene P,M	mg/kg	0.0141	U	0.0326	U	0.0196	U	0.0222	U	0.0217	U	0.0267	U	0.042	U	---	---
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																	
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.23	U
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U

Laboratory Sample Designation		1709418-01		1709418-02		1709418-03		1709418-04		1709418-05		1709418-06		1709418-07		1709418-08	
Sample Designation		SED-G-20 (1_68-2_1')		SED-G-13 (1_2-1_8')		SED-G-21 (1_4-2_1')		SED-G-19 (1_36-1_7')		SED-G-DUP-1		SED-G-28 (2_36-3_54')		SED-G-25 (2_8-3_5')		SED-C-51 (0-5_3')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
2-Chlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
2-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
2-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
3+4-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.79	-
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
4-Chloroaniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
4-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.59	U
Acenaphthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Acenaphthylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
Acetophenone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.23	U
Aniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.59	U
Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Azobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**313**	D
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.23	-
Chrysene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
Dibenzofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Diethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Dimethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.12**	U
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	84.0	D
Fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Fluorene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Hexachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Isophorone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Nitrobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Pentachlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.23	U
Phenanthrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U

Laboratory Sample Designation		1709418-01		1709418-02		1709418-03		1709418-04		1709418-05		1709418-06		1709418-07		1709418-08	
Sample Designation		SED-G-20 (1_68-2_1')		SED-G-13 (1_2-1_8')		SED-G-21 (1_4-2_1')		SED-G-19 (1_36-1_7')		SED-G-DUP-1		SED-G-28 (2_36-3_54')		SED-G-25 (2_8-3_5')		SED-C-51 (0-5_3')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Phenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.559	U
Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	U
Pyridine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.59	U
Total Metals																	
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																	
4,4´-DDD	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
4,4´-DDE	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
4,4´-DDT	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
alpha-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
alpha-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
beta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0326	LC, P
Chlordane (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.067	U
delta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Dieldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0088	LC, P
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Endrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Endrin Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.005**	U
gamma-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Heptachlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0142	LC, P
Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0084	U
Toxaphene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.419	U
PCBs																	
Aroclor 1016	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	U
Aroclor 1221	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	U
Aroclor 1232	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	U
Aroclor 1242	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.1**	D
Aroclor 1248	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	U

Laboratory Sample Designation		1709418-01		1709418-02		1709418-03		1709418-04		1709418-05		1709418-06		1709418-07		1709418-08	
Sample Designation		SED-G-20 (1_68-2_1')		SED-G-13 (1_2-1_8')		SED-G-21 (1_4-2_1')		SED-G-19 (1_36-1_7')		SED-G-DUP-1		SED-G-28 (2_36-3_54')		SED-G-25 (2_8-3_5')		SED-C-51 (0-5_3')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Aroclor 1254	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**5.3**	D
Aroclor 1260	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.2**	D
Aroclor 1262	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	U
Aroclor 1268	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	U
Herbicides																	
2,4,5-T	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.066	U
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.188	-
2,4-D	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.328	U
2,4-DB	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.331	U
Dalapon	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.317	U
Dicamba	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.456	LC, P
Dichlorprop	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.430	LC, P
Dinoseb	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.331	U
MCPA	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	16.2	#
MCPP	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	16.4	#
Classical Chemistry																	
Corrosivity (pH)	S.U.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7.31	-
Flashpoint	°F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	200	>
Percent Moisture	%	---	---	---	---	---	---	---	---	---	---	---	---	---	---	71	-
Reactive Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2	U
Reactive Sulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	72.1	-
TCLP Metals																	
Arsenic	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.05	U
Barium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.05	U
Cadmium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	U
Chromium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.02	U
Lead	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.05	U
Mercury	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0005	U
Selenium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.25	U, D
Silver	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	U

Laboratory Sample Designation		1709418-09		1709418-10		1709418-11	
Sample Designation		SED-G-51 (2_12-3_18')		Trip Blank - 2		SED-C-51 (0-5_3') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017	
Sample Depth							
Soil Type							
Group Designation							
VOCs - Low							
1,1,1,2-Tetrachloroethane	mg/kg	0.02	U	0.005	U	---	---
1,1,1-Trichloroethane	mg/kg	0.02	U	0.005	U	---	---
1,1,2,2-Tetrachloroethane	mg/kg	**0.008**	U	0.002	U	---	---
1,1,2-Trichloroethane	mg/kg	0.02	U	0.005	U	---	---
1,1-Dichloroethane	mg/kg	0.02	U	0.005	U	---	---
1,1-Dichloroethene	mg/kg	0.02	U	0.005	U	---	---
1,1-Dichloropropene	mg/kg	0.02	U	0.005	U	---	---
1,2,3-Trichlorobenzene	mg/kg	0.02	U	0.005	U	---	---
1,2,3-Trichloropropane	mg/kg	0.02	U	0.005	U	---	---
1,2,4-Trichlorobenzene	mg/kg	0.02	U	0.005	U	---	---
1,2,4-Trimethylbenzene	mg/kg	0.02	U	0.005	U	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	0.02	U	0.005	U	---	---
1,2-Dibromoethane	mg/kg	0.02	U	0.005	U	---	---
1,2-Dichlorobenzene	mg/kg	0.02	U	0.005	U	---	---
1,2-Dichloroethane	mg/kg	0.02	U	0.005	U	---	---
1,2-Dichloropropane	mg/kg	0.02	U	0.005	U	---	---
1,3,5-Trimethylbenzene	mg/kg	0.02	U	0.005	U	---	---
1,3-Dichlorobenzene	mg/kg	0.02	U	0.005	U	---	---
1,3-Dichloropropane	mg/kg	0.02	U	0.005	U	---	---
1,4-Dichlorobenzene	mg/kg	0.02	U	0.005	U	---	---
1,4-Dioxane	mg/kg	**0.4**	U	0.1	U	---	---
2,2-Dichloropropane	mg/kg	0.02	U	0.005	U	---	---
2-Butanone	mg/kg	0.0621	-	0.01	U	---	---
2-Chlorotoluene	mg/kg	0.02	U	0.005	U	---	---
2-Hexanone	mg/kg	0.04	U	0.01	U	---	---
4-Chlorotoluene	mg/kg	0.02	U	0.005	U	---	---
4-Isopropyltoluene	mg/kg	0.02	U	0.005	U	---	---
4-Methyl-2-Pentanone	mg/kg	0.04	U	0.01	U	---	---
Acetone	mg/kg	0.463	-	0.0126	-	---	---
Benzene	mg/kg	0.02	U	0.005	U	---	---
Bromobenzene	mg/kg	0.02	U	0.005	U	---	---
Bromochloromethane	mg/kg	0.02	U	0.005	U	---	---
Bromodichloromethane	mg/kg	0.02	U	0.005	U	---	---
Bromoform	mg/kg	0.02	U	0.005	U	---	---
Bromomethane	mg/kg	0.04	U	0.01	U	---	---
Carbon Disulfide	mg/kg	0.02	U	0.005	U	---	---
Carbon Tetrachloride	mg/kg	0.02	U	0.005	U	---	---
Chlorobenzene	mg/kg	0.100	-	0.005	U	---	---
Chloroethane	mg/kg	0.04	U	0.01	U	---	---
Chloroform	mg/kg	0.02	U	0.005	U	---	---
Chloromethane	mg/kg	0.04	U	0.01	U	---	---
cis-1,2-Dichloroethene	mg/kg	0.02	U	0.005	U	---	---

Laboratory Sample Designation		1709418-09		1709418-10		1709418-11	
Sample Designation		SED-G-51 (2_12-3_18')		Trip Blank - 2		SED-C-51 (0-5_3') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017	
Sample Depth							
Soil Type							
Group Designation							
cis-1,3-Dichloropropene	mg/kg	**0.02**	U	0.005	U	---	---
Dibromochloromethane	mg/kg	**0.008**	U	0.002	U	---	---
Dibromomethane	mg/kg	0.02	U	0.005	U	---	---
Dichlorodifluoromethane	mg/kg	0.04	U	0.01	U	---	---
Diethyl Ether	mg/kg	0.0227	-	0.005	U	---	---
Di-isopropyl ether	mg/kg	0.02	U	0.005	U	---	---
Ethyl tertiary-butyl ether	mg/kg	0.02	U	0.005	U	---	---
Ethylbenzene	mg/kg	0.02	U	0.005	U	---	---
Hexachlorobutadiene	mg/kg	0.02	U	0.005	U	---	---
Isopropylbenzene	mg/kg	0.02	U	0.005	U	---	---
Methyl tert-Butyl Ether	mg/kg	0.02	U	0.005	U	---	---
Methylene Chloride	mg/kg	0.04	U	0.01	U	---	---
Naphthalene	mg/kg	0.02	U	0.005	U	---	---
n-Butylbenzene	mg/kg	0.02	U	0.005	U	---	---
n-Propylbenzene	mg/kg	0.02	U	0.005	U	---	---
sec-Butylbenzene	mg/kg	0.02	U	0.005	U	---	---
Styrene	mg/kg	0.02	U	0.005	U	---	---
tert-Butylbenzene	mg/kg	0.02	U	0.005	U	---	---
Tertiary-amyl methyl ether	mg/kg	0.02	U	0.005	U	---	---
Tetrachloroethene	mg/kg	0.02	U	0.005	U	---	---
Tetrahydrofuran	mg/kg	0.02	U	0.005	U	---	---
Toluene	mg/kg	0.02	U	0.005	U	---	---
trans-1,2-Dichloroethene	mg/kg	0.02	U	0.005	U	---	---
trans-1,3-Dichloropropene	mg/kg	**0.02**	U	0.005	U	---	---
Trichloroethene	mg/kg	0.02	U	0.005	U	---	---
Trichlorofluoromethane	mg/kg	0.02	U	0.005	U	---	---
Vinyl Chloride	mg/kg	0.04	U	0.01	U	---	---
Xylene O	mg/kg	0.02	U	0.005	U	---	---
Xylene P,M	mg/kg	0.04	U	0.01	U	---	---
Xylenes (Total)	mg/kg	---	---	0.0075	U	---	---
SVOCs							
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---

Laboratory Sample Designation		1709418-09		1709418-10		1709418-11	
Sample Designation		SED-G-51 (2_12-3_18')		Trip Blank - 2		SED-C-51 (0-5_3') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017	
Sample Depth							
Soil Type							
Group Designation							
2-Chlorophenol	mg/kg	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---
2-Methylphenol	mg/kg	---	---	---	---	---	---
2-Nitrophenol	mg/kg	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	---	---	---	---
Aniline	mg/kg	---	---	---	---	---	---
Anthracene	mg/kg	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---
Chrysene	mg/kg	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---	---	---
Dimethylphthalate	mg/kg	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---	---	---
Fluorene	mg/kg	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---
Isophorone	mg/kg	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---	---	---

Laboratory Sample Designation		1709418-09		1709418-10		1709418-11	
Sample Designation		SED-G-51 (2_12-3_18')		Trip Blank - 2		SED-C-51 (0-5_3') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017	
Sample Depth							
Soil Type							
Group Designation							
Phenol	mg/kg	---	---	---	---	---	---
Pyrene	mg/kg	---	---	---	---	---	---
Pyridine	mg/kg	---	---	---	---	---	---
Total Metals							
Arsenic	mg/kg	---	---	---	---	**256**	-
Barium	mg/kg	---	---	---	---	93.1	-
Cadmium	mg/kg	---	---	---	---	2.03	-
Chromium	mg/kg	---	---	---	---	**139**	-
Lead	mg/kg	---	---	---	---	**579**	-
Mercury	mg/kg	---	---	---	---	4.18	D
Selenium	mg/kg	---	---	---	---	21.2	EL, U, D
Silver	mg/kg	---	---	---	---	2.91	-
Pesticides							
4,4´-DDD	mg/kg	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---	---	---
Aldrin	mg/kg	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---	---	---
alpha-Chlordane	mg/kg	---	---	---	---	---	---
beta-BHC	mg/kg	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---	---	---
Endosulfan II	mg/kg	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---
Endrin	mg/kg	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---	---	---
Heptachlor	mg/kg	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	---	---	---	---
PCBs							
Aroclor 1016	mg/kg	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---	---	---

Laboratory Sample Designation		1709418-09		1709418-10		1709418-11	
Sample Designation		SED-G-51 (2_12-3_18')		Trip Blank - 2		SED-C-51 (0-5_3') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017	
Sample Depth							
Soil Type							
Group Designation							
Aroclor 1254	mg/kg	---	---	---	---	---	---
Aroclor 1260	mg/kg	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---	---	---
Herbicides							
2,4,5-T	mg/kg	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---
2,4-D	mg/kg	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	---	---	---	---
Dalapon	mg/kg	---	---	---	---	---	---
Dicamba	mg/kg	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	---	---	---	---
MCPA	mg/kg	---	---	---	---	---	---
MCPP	mg/kg	---	---	---	---	---	---
Classical Chemistry							
Corrosivity (pH)	S.U.	---	---	---	---	---	---
Flashpoint	°F	---	---	---	---	---	---
Percent Moisture	%	---	---	---	---	---	---
Reactive Cyanide	mg/kg	---	---	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---	---	---
TCLP Metals							
Arsenic	mg/L	---	---	---	---	---	---
Barium	mg/L	---	---	---	---	---	---
Cadmium	mg/L	---	---	---	---	---	---
Chromium	mg/L	---	---	---	---	---	---
Lead	mg/L	---	---	---	---	---	---
Mercury	mg/L	---	---	---	---	---	---
Selenium	mg/L	---	---	---	---	---	---
Silver	mg/L	---	---	---	---	---	---

Laboratory Sample Designation		1709419-01		1709419-02		1709419-03		1709419-04		1709419-05		1709419-06		1709419-07		1709419-08		1709419-09		1709419-10	
Sample Designation		SED-C-DUP-2		SED-G-DUP-2		SED-G-48 (2_46-3_28')		SED-C-54 (0-7_6')		SED-G-54 (4_56-6_08')		SED-C-53 (0-6_5')		SED-G-53 (5_2-6_5')		SED-C-58 (0-6_5')		SED-G-58 (5_2-6_5')		SED-C-59 (0-6_9')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
VOCs - Low																					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,1,1-Trichloroethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	**0.0062**	U	0.0042	U	---	---	**0.0056**	U	---	---	---	---	---	---	0.0046	U	---	---
1,1,2-Trichloroethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,1-Dichloroethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,1-Dichloroethene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,1-Dichloropropene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,2,3-Trichloropropane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,2-Dibromoethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,2-Dichlorobenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0305	-	---	---
1,2-Dichloroethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,2-Dichloropropane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,3-Dichlorobenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,3-Dichloropropane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,4-Dichlorobenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
1,4-Dioxane	mg/kg	---	---	**0.308**	U	**0.211**	U	---	---	**0.28**	U	---	---	---	---	---	---	**0.229**	U	---	---
2,2-Dichloropropane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
2-Butanone	mg/kg	---	---	0.0732	-	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
2-Chlorotoluene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
2-Hexanone	mg/kg	---	---	0.0308	U	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
4-Chlorotoluene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
4-Isopropyltoluene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	0.0308	U	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
Acetone	mg/kg	---	---	0.457	-	0.0948	-	---	---	0.196	-	---	---	---	---	---	---	0.207	-	---	---
Benzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0178	-	---	---
Bromobenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Bromochloromethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Bromodichloromethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Bromoform	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Bromomethane	mg/kg	---	---	0.0308	U	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
Carbon Disulfide	mg/kg	---	---	0.0168	-	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Carbon Tetrachloride	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Chlorobenzene	mg/kg	---	---	0.409	-	0.0106	U	---	---	0.389	-	---	---	---	---	---	---	0.0114	U	---	---
Chloroethane	mg/kg	---	---	0.0308	U	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
Chloroform	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0178	-	---	---
Chloromethane	mg/kg	---	---	0.0308	U	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	**0.0154**	U	**0.0106**	U	---	---	**0.014**	U	---	---	---	---	---	---	**0.0114**	U	---	---

Laboratory Sample Designation		1709419-01		1709419-02		1709419-03		1709419-04		1709419-05		1709419-06		1709419-07		1709419-08		1709419-09		1709419-10	
Sample Designation		SED-C-DUP-2		SED-G-DUP-2		SED-G-48 (2_46-3_28')		SED-C-54 (0-7_6')		SED-G-54 (4_56-6_08')		SED-C-53 (0-6_5')		SED-G-53 (5_2-6_5')		SED-C-58 (0-6_5')		SED-G-58 (5_2-6_5')		SED-C-59 (0-6_9')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Dibromochloromethane	mg/kg	---	---	**0.0062**	U	0.0042	U	---	---	**0.0056**	U	---	---	---	---	---	---	0.0046	U	---	---
Dibromomethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Dichlorodifluoromethane	mg/kg	---	---	0.0308	U	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
Diethyl Ether	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.0308	-	---	---	---	---	---	---	0.150	-	---	---
Di-isopropyl ether	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Ethylbenzene	mg/kg	---	---	0.0198	-	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Hexachlorobutadiene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Isopropylbenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Methylene Chloride	mg/kg	---	---	0.0308	U	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
Naphthalene	mg/kg	---	---	0.0190	-	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
n-Butylbenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
n-Propylbenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
sec-Butylbenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Styrene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
tert-Butylbenzene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Tetrachloroethene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Tetrahydrofuran	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0157	-	---	---
Toluene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	**0.0154**	U	**0.0106**	U	---	---	**0.014**	U	---	---	---	---	---	---	**0.0114**	U	---	---
Trichloroethene	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Trichlorofluoromethane	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Vinyl Chloride	mg/kg	---	---	0.0308	U	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
Xylene O	mg/kg	---	---	0.0154	U	0.0106	U	---	---	0.014	U	---	---	---	---	---	---	0.0114	U	---	---
Xylene P,M	mg/kg	---	---	0.0308	U	0.0211	U	---	---	0.028	U	---	---	---	---	---	---	0.0229	U	---	---
VOCs																					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	5.55	U	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---

Laboratory Sample Designation		1709419-01		1709419-02		1709419-03		1709419-04		1709419-05		1709419-06		1709419-07		1709419-08		1709419-09		1709419-10	
Sample Designation		SED-C-DUP-2		SED-G-DUP-2		SED-G-48 (2_46-3_28')		SED-C-54 (0-7_6')		SED-G-54 (4_56-6_08')		SED-C-53 (0-6_5')		SED-G-53 (5_2-6_5')		SED-C-58 (0-6_5')		SED-G-58 (5_2-6_5')		SED-C-59 (0-6_9')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**222**	U	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**5.55**	U	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	5.55	U	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**5.55**	U	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	5.55	U	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	4.66	-	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**2.22**	U	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---

Laboratory Sample Designation		1709419-01		1709419-02		1709419-03		1709419-04		1709419-05		1709419-06		1709419-07		1709419-08		1709419-09		1709419-10	
Sample Designation		SED-C-DUP-2		SED-G-DUP-2		SED-G-48 (2_46-3_28')		SED-C-54 (0-7_6')		SED-G-54 (4_56-6_08')		SED-C-53 (0-6_5')		SED-G-53 (5_2-6_5')		SED-C-58 (0-6_5')		SED-G-58 (5_2-6_5')		SED-C-59 (0-6_9')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	5.55	U	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**1.11**	U	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.11	U	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	2.22	U	---	---	---	---	---	---
SVOCs																					
1,2,4-Trichlorobenzene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
1,2-Dichlorobenzene	mg/kg	1.19	U	---	---	---	---	**9.16**	-	---	---	2.49	-	---	---	1.52	-	---	---	0.862	U
1,3-Dichlorobenzene	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
1,4-Dichlorobenzene	mg/kg	0.598	U	---	---	---	---	**2.74**	-	---	---	**0.927**	-	---	---	0.595	-	---	---	0.432	U
2,4,5-Trichlorophenol	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
2,4,6-Trichlorophenol	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
2,4-Dichlorophenol	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
2,4-Dimethylphenol	mg/kg	0.598	U	---	---	---	---	0.564	-	---	---	0.532	-	---	---	0.433	U	---	---	0.432	U
2,4-Dinitrophenol	mg/kg	2.39	U	---	---	---	---	1.87	U	---	---	1.8	U	---	---	1.73	U	---	---	1.73	U
2,4-Dinitrotoluene	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
2,6-Dinitrotoluene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
2-Chloronaphthalene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
2-Chlorophenol	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
2-Methylnaphthalene	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
2-Methylphenol	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
2-Nitrophenol	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
3,3´-Dichlorobenzidine	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
3+4-Methylphenol	mg/kg	4.78	-	---	---	---	---	1.87	U	---	---	1.8	U	---	---	1.73	U	---	---	1.73	U
4-Bromophenyl-phenylether	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
4-Chloroaniline	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
4-Nitrophenol	mg/kg	5.98	U	---	---	---	---	4.68	U	---	---	4.51	U	---	---	4.33	U	---	---	4.32	U
Acenaphthene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
Acenaphthylene	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
Acetophenone	mg/kg	2.39	U	---	---	---	---	1.87	U	---	---	1.8	U	---	---	1.73	U	---	---	1.73	U
Aniline	mg/kg	5.98	U	---	---	---	---	4.68	U	---	---	4.51	U	---	---	4.33	U	---	---	4.32	U
Anthracene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
Azobenzene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
Benzo(a)anthracene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	1.88	-
Benzo(a)pyrene	mg/kg	0.598	U	---	---	---	---	0.634	-	---	---	0.888	-	---	---	0.703	-	---	---	1.62	-
Benzo(b)fluoranthene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	1.23	-	---	---	0.991	-	---	---	2.08	-
Benzo(g,h,i)perylene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.905	-
Benzo(k)fluoranthene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U

Laboratory Sample Designation		1709419-01		1709419-02		1709419-03		1709419-04		1709419-05		1709419-06		1709419-07		1709419-08		1709419-09		1709419-10	
Sample Designation		SED-C-DUP-2		SED-G-DUP-2		SED-G-48 (2_46-3_28')		SED-C-54 (0-7_6')		SED-G-54 (4_56-6_08')		SED-C-53 (0-6_5')		SED-G-53 (5_2-6_5')		SED-C-58 (0-6_5')		SED-G-58 (5_2-6_5')		SED-C-59 (0-6_9')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
bis(2-Chloroethoxy)methane	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
bis(2-Chloroethyl)ether	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
bis(2-chloroisopropyl)Ether	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
bis(2-Ethylhexyl)phthalate	mg/kg	**348**	D	---	---	---	---	**234**	D	---	---	**266**	D	---	---	**159**	D	---	---	**94.6**	D
Butylbenzylphthalate	mg/kg	1.19	U	---	---	---	---	3.11	-	---	---	2.45	-	---	---	2.82	-	---	---	0.993	-
Chrysene	mg/kg	0.598	U	---	---	---	---	0.682	-	---	---	1.00	-	---	---	0.787	-	---	---	1.73	-
Dibenzo(a,h)Anthracene	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.468	-
Dibenzofuran	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
Diethylphthalate	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
Dimethylphthalate	mg/kg	**1.19**	U	---	---	---	---	**0.934**	U	---	---	**0.899**	U	---	---	**0.863**	U	---	---	**0.862**	U
Di-n-butylphthalate	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	1.40	-	---	---	0.863	U	---	---	0.862	U
Di-n-octylphthalate	mg/kg	89.9	D	---	---	---	---	39.4	D	---	---	65.2	D	---	---	14.8	-	---	---	6.02	-
Fluoranthene	mg/kg	1.19	U	---	---	---	---	1.22	-	---	---	1.58	-	---	---	1.47	-	---	---	3.61	-
Fluorene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
Hexachlorobenzene	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
Hexachlorobutadiene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
Hexachloroethane	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
Indeno(1,2,3-cd)Pyrene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.864	-
Isophorone	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
Naphthalene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	1.99	-	---	---	3.86	-
Nitrobenzene	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
N-Nitrosodimethylamine	mg/kg	1.19	U	---	---	---	---	0.934	U	---	---	0.899	U	---	---	0.863	U	---	---	0.862	U
Pentachlorophenol	mg/kg	2.39	U	---	---	---	---	1.87	U	---	---	1.8	U	---	---	1.73	U	---	---	1.73	U
Phenanthrene	mg/kg	1.19	U	---	---	---	---	1.04	-	---	---	1.15	-	---	---	0.863	U	---	---	1.87	-
Phenol	mg/kg	0.598	U	---	---	---	---	0.468	U	---	---	0.451	U	---	---	0.433	U	---	---	0.432	U
Pyrene	mg/kg	1.19	U	---	---	---	---	1.19	-	---	---	1.60	-	---	---	1.30	-	---	---	3.00	-
Pyridine	mg/kg	5.98	U	---	---	---	---	4.68	U	---	---	4.51	U	---	---	4.33	U	---	---	4.32	U
Total Metals																					
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																					
4,4´-DDD	mg/kg	0.0093	U	---	---	---	---	0.0202	-	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
4,4´-DDE	mg/kg	0.0093	U	---	---	---	---	0.0289	LC, P	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
4,4´-DDT	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Aldrin	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
alpha-BHC	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
alpha-Chlordane	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U

Laboratory Sample Designation		1709419-01		1709419-02		1709419-03		1709419-04		1709419-05		1709419-06		1709419-07		1709419-08		1709419-09		1709419-10	
Sample Designation		SED-C-DUP-2		SED-G-DUP-2		SED-G-48 (2_46-3_28')		SED-C-54 (0-7_6')		SED-G-54 (4_56-6_08')		SED-C-53 (0-6_5')		SED-G-53 (5_2-6_5')		SED-C-58 (0-6_5')		SED-G-58 (5_2-6_5')		SED-C-59 (0-6_9')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
beta-BHC	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.0162	-	---	---	0.0065	U	---	---	0.0064	U
Chlordane (Total)	mg/kg	0.0743	U	---	---	---	---	0.0572	U	---	---	0.0559	U	---	---	0.0522	U	---	---	0.0514	U
delta-BHC	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Dieldrin	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0211	-
Endosulfan I	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Endosulfan II	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Endosulfan Sulfate	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Endrin	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Endrin Ketone	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
gamma-BHC (Lindane)	mg/kg	**0.0056**	U	---	---	---	---	**0.0043**	U	---	---	**0.0042**	U	---	---	**0.0039**	U	---	---	**0.0039**	U
gamma-Chlordane	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Heptachlor	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Heptachlor Epoxide	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Hexachlorobenzene	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.0077	LC, P	---	---	0.0065	U	---	---	0.0064	U
Methoxychlor	mg/kg	0.0093	U	---	---	---	---	0.0072	U	---	---	0.007	U	---	---	0.0065	U	---	---	0.0064	U
Toxaphene	mg/kg	0.464	U	---	---	---	---	0.358	U	---	---	0.35	U	---	---	0.326	U	---	---	0.321	U
PCBs																					
Aroclor 1016	mg/kg	0.2	U	---	---	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1221	mg/kg	0.2	U	---	---	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1232	mg/kg	0.2	U	---	---	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1242	mg/kg	**1.9**	P	---	---	---	---	0.7	LC, P	---	---	**1.9**	P	---	---	0.3	-	---	---	0.7	-
Aroclor 1248	mg/kg	0.2	U	---	---	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1254	mg/kg	**2.6**	P	---	---	---	---	**1.8**	P	---	---	**2.1**	P	---	---	0.4	-	---	---	**1.1**	-
Aroclor 1260	mg/kg	0.8	P	---	---	---	---	0.7	-	---	---	0.5	LC, P	---	---	0.1	U	---	---	0.3	LC, P
Aroclor 1262	mg/kg	0.2	U	---	---	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1268	mg/kg	0.2	U	---	---	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Herbicides																					
2,4,5-T	mg/kg	0.069	U	---	---	---	---	0.054	U	---	---	0.054	U	---	---	0.046	U	---	---	0.047	U
2,4,5-TP (Silvex)	mg/kg	0.069	U	---	---	---	---	0.054	U	---	---	0.094	LC, P	---	---	0.085	-	---	---	0.096	LC, P
2,4-D	mg/kg	0.341	U	---	---	---	---	0.269	U	---	---	0.265	U	---	---	0.228	U	---	---	0.233	U
2,4-DB	mg/kg	0.344	U	---	---	---	---	0.272	U	---	---	0.268	U	---	---	0.23	U	---	---	0.235	U
Dalapon	mg/kg	0.33	U	---	---	---	---	0.26	U	---	---	0.257	U	---	---	0.22	U	---	---	0.225	U
Dicamba	mg/kg	0.499	-	---	---	---	---	0.269	LC, P	---	---	0.329	LC, P	---	---	0.222	-	---	---	0.266	LC, P
Dichlorprop	mg/kg	0.341	U	---	---	---	---	0.269	U	---	---	0.274	LC, P	---	---	0.228	U	---	---	0.262	LC, P
Dinoseb	mg/kg	0.344	U	---	---	---	---	0.272	U	---	---	0.268	U	---	---	0.23	U	---	---	0.235	U
MCPA	mg/kg	16.9	#	---	---	---	---	13.3	U	---	---	13.1	U	---	---	11.3	U	---	---	11.5	U
MCPP	mg/kg	17.0	#	---	---	---	---	13.4	#	---	---	13.3	#	---	---	11.4	#	---	---	11.6	#
Classical Chemistry																					
Corrosivity (pH)	S.U.	7.27	-	---	---	---	---	6.70	-	---	---	7.15	-	---	---	6.90	-	---	---	6.53	-
Flashpoint	°F	200	>	---	---	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>
Percent Moisture	%	73	-	---	---	---	---	65	-	---	---	65	-	---	---	63	-	---	---	62	-
Reactive Cyanide	mg/kg	2	U	---	---	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U

Laboratory Sample Designation		1709419-01		1709419-02		1709419-03		1709419-04		1709419-05		1709419-06		1709419-07		1709419-08		1709419-09		1709419-10	
Sample Designation		SED-C-DUP-2		SED-G-DUP-2		SED-G-48 (2_46-3_28')		SED-C-54 (0-7_6')		SED-G-54 (4_56-6_08')		SED-C-53 (0-6_5')		SED-G-53 (5_2-6_5')		SED-C-58 (0-6_5')		SED-G-58 (5_2-6_5')		SED-C-59 (0-6_9')	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Reactive Sulfide	mg/kg	2.6	-	---	---	---	---	2	U	---	---	122	-	---	---	45.9	-	---	---	2	U
TCLP Metals																					
Arsenic	mg/L	0.05	U	---	---	---	---	0.157	-	---	---	0.070	-	---	---	0.135	-	---	---	0.082	-
Barium	mg/L	0.05	U	---	---	---	---	0.169	-	---	---	0.170	-	---	---	0.196	-	---	---	0.139	-
Cadmium	mg/L	0.01	U	---	---	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U
Chromium	mg/L	0.02	U	---	---	---	---	0.02	U	---	---	0.143	-	---	---	0.02	U	---	---	0.02	U
Lead	mg/L	0.05	U	---	---	---	---	0.103	-	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U
Mercury	mg/L	0.0005	U	---	---	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U
Selenium	mg/L	0.3	U, D	---	---	---	---	0.1	U	---	---	0.1	U	---	---	0.3	U, D	---	---	0.3	U, D
Silver	mg/L	0.01	U	---	---	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U

Laboratory Sample Designation		1709419-11		1709419-12		1709419-13		1709419-14		1709419-15		1709419-16		1709419-17		1709419-18	
Sample Designation		SED-G-59 (5_52-6_9')		SED-C-57 (0-7_5')		SED-G-57 (6_0-7_5')		SED-C-DUP-2 - Dried		SED-C-54 (0-7_6') - Dried		SED-C-53 (0-6_5') - Dried		SED-C-58 (0-6_5') - Dried		SED-C-59 (0-6_9') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
VOCs - Low																	
1,1,1,2-Tetrachloroethane	mg/kg	0.0389	-	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	**0.0209**	-	---	---	**0.0072**	U	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	0.141	-	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	0.0216	-	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	0.0368	-	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	**0.362**	U	---	---	**0.359**	U	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	0.238	-	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	0.111	-	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	0.0462	-	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	2.51	-	---	---	0.221	-	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	0.0542	-	---	---	0.0356	-	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	0.109	-	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	0.0232	-	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	0.0362	U	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	0.0391	-	---	---	0.0362	-	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	0.0556	-	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	0.0362	U	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	**0.0181**	U	---	---	**0.018**	U	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709419-11		1709419-12		1709419-13		1709419-14		1709419-15		1709419-16		1709419-17		1709419-18	
Sample Designation		SED-G-59 (5_52-6_9')		SED-C-57 (0-7_5')		SED-G-57 (6_0-7_5')		SED-C-DUP-2 - Dried		SED-C-54 (0-7_6') - Dried		SED-C-53 (0-6_5') - Dried		SED-C-58 (0-6_5') - Dried		SED-C-59 (0-6_9') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Dibromochloromethane	mg/kg	**0.0252**	-	---	---	**0.0072**	U	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	0.0362	U	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	0.0999	-	---	---	0.0681	-	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	0.0362	U	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	0.0322	-	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	0.0544	-	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	0.0203	-	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	**0.0181**	U	---	---	**0.018**	U	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	0.0403	-	---	---	0.0208	-	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	0.0362	U	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	0.0181	U	---	---	0.018	U	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	0.0362	U	---	---	0.0359	U	---	---	---	---	---	---	---	---	---	---
VOCs																	
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709419-11		1709419-12		1709419-13		1709419-14		1709419-15		1709419-16		1709419-17		1709419-18	
Sample Designation		SED-G-59 (5_52-6_9')		SED-C-57 (0-7_5')		SED-G-57 (6_0-7_5')		SED-C-DUP-2 - Dried		SED-C-54 (0-7_6') - Dried		SED-C-53 (0-6_5') - Dried		SED-C-58 (0-6_5') - Dried		SED-C-59 (0-6_9') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709419-11		1709419-12		1709419-13		1709419-14		1709419-15		1709419-16		1709419-17		1709419-18	
Sample Designation		SED-G-59 (5_52-6_9')		SED-C-57 (0-7_5')		SED-G-57 (6_0-7_5')		SED-C-DUP-2 - Dried		SED-C-54 (0-7_6') - Dried		SED-C-53 (0-6_5') - Dried		SED-C-58 (0-6_5') - Dried		SED-C-59 (0-6_9') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																	
1,2,4-Trichlorobenzene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	3.20	-	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	0.571	-	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	1.92	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	1.92	U	---	---	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	4.82	U	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	1.92	U	---	---	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	---	---	4.82	U	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	0.491	-	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709419-11		1709419-12		1709419-13		1709419-14		1709419-15		1709419-16		1709419-17		1709419-18	
Sample Designation		SED-G-59 (5_52-6_9')		SED-C-57 (0-7_5')		SED-G-57 (6_0-7_5')		SED-C-DUP-2 - Dried		SED-C-54 (0-7_6') - Dried		SED-C-53 (0-6_5') - Dried		SED-C-58 (0-6_5') - Dried		SED-C-59 (0-6_9') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
bis(2-Chloroethoxy)methane	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	**301**	D	---	---	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	---	---	2.15	-	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	---	---	0.596	-	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	---	---	**0.961**	U	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	46.1	D	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	1.08	-	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	1.92	U	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	---	---	0.482	U	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	---	---	0.961	U	---	---	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	---	---	4.82	U	---	---	---	---	---	---	---	---	---	---	---	---
Total Metals																	
Arsenic	mg/kg	---	---	---	---	---	---	**264**	-	**148**	-	**143**	-	**231**	-	**232**	-
Barium	mg/kg	---	---	---	---	---	---	87.5	-	102	-	112	-	113	-	109	-
Cadmium	mg/kg	---	---	---	---	---	---	1.83	-	2.54	-	3.11	-	2.07	-	2.20	-
Chromium	mg/kg	---	---	---	---	---	---	**114**	-	**116**	-	**113**	-	**104**	-	**106**	-
Lead	mg/kg	---	---	---	---	---	---	**505**	-	**610**	-	**705**	-	**573**	-	**601**	-
Mercury	mg/kg	---	---	---	---	---	---	4.10	D	3.19	D	4.66	D	2.55	D	3.57	D
Selenium	mg/kg	---	---	---	---	---	---	20.6	EL, U, D	20.1	EL, U, D	19.9	EL, U, D	20.3	EL, U, D	20.5	EL, U, D
Silver	mg/kg	---	---	---	---	---	---	2.74	-	2.21	-	3.31	-	1.84	-	2.09	-
Pesticides																	
4,4´-DDD	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709419-11		1709419-12		1709419-13		1709419-14		1709419-15		1709419-16		1709419-17		1709419-18	
Sample Designation		SED-G-59 (5_52-6_9')		SED-C-57 (0-7_5')		SED-G-57 (6_0-7_5')		SED-C-DUP-2 - Dried		SED-C-54 (0-7_6') - Dried		SED-C-53 (0-6_5') - Dried		SED-C-58 (0-6_5') - Dried		SED-C-59 (0-6_9') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
beta-BHC	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	0.0608	U	---	---	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	---	---	0.0081	LC, P	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	**0.0046**	U	---	---	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	0.0076	U	---	---	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	0.38	U	---	---	---	---	---	---	---	---	---	---	---	---
PCBs																	
Aroclor 1016	mg/kg	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	**1.6**	D	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	---	---	**3.4**	D	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	---	---	**1.1**	D	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Herbicides																	
2,4,5-T	mg/kg	---	---	0.057	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	0.233	-	---	---	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	---	---	0.28	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	0.283	U	---	---	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	---	---	0.271	U	---	---	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	---	---	0.392	LC, P	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	0.347	LC, P	---	---	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	0.283	U	---	---	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	---	---	13.9	U	---	---	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	---	---	14.0	#	---	---	---	---	---	---	---	---	---	---	---	---
Classical Chemistry																	
Corrosivity (pH)	S.U.	---	---	6.44	-	---	---	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	---	---	200	>	---	---	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	---	---	67	-	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	---	---	2	U	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709419-11		1709419-12		1709419-13		1709419-14		1709419-15		1709419-16		1709419-17		1709419-18	
Sample Designation		SED-G-59 (5_52-6_9')		SED-C-57 (0-7_5')		SED-G-57 (6_0-7_5')		SED-C-DUP-2 - Dried		SED-C-54 (0-7_6') - Dried		SED-C-53 (0-6_5') - Dried		SED-C-58 (0-6_5') - Dried		SED-C-59 (0-6_9') - Dried	
Sample Date		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017		09/14/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Reactive Sulfide	mg/kg	---	---	2.3	-	---	---	---	---	---	---	---	---	---	---	---	---
TCLP Metals																	
Arsenic	mg/L	---	---	0.165	-	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	---	---	0.05	U	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	---	---	0.01	U	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	---	---	0.02	U	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	---	---	0.05	U	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	---	---	0.0005	U	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	---	---	0.15	U, D	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	---	---	0.01	U	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709419-19	
Sample Designation		SED-C-57 (0-7_5') - Dried	
Sample Date		09/14/2017	
Sample Depth			
Soil Type			
Group Designation			
VOCs - Low			
1,1,1,2-Tetrachloroethane	mg/kg	---	---
1,1,1-Trichloroethane	mg/kg	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---
1,1,2-Trichloroethane	mg/kg	---	---
1,1-Dichloroethane	mg/kg	---	---
1,1-Dichloroethene	mg/kg	---	---
1,1-Dichloropropene	mg/kg	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---
1,2,3-Trichloropropane	mg/kg	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---
1,2-Dibromoethane	mg/kg	---	---
1,2-Dichlorobenzene	mg/kg	---	---
1,2-Dichloroethane	mg/kg	---	---
1,2-Dichloropropane	mg/kg	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---
1,3-Dichlorobenzene	mg/kg	---	---
1,3-Dichloropropane	mg/kg	---	---
1,4-Dichlorobenzene	mg/kg	---	---
1,4-Dioxane	mg/kg	---	---
2,2-Dichloropropane	mg/kg	---	---
2-Butanone	mg/kg	---	---
2-Chlorotoluene	mg/kg	---	---
2-Hexanone	mg/kg	---	---
4-Chlorotoluene	mg/kg	---	---
4-Isopropyltoluene	mg/kg	---	---
4-Methyl-2-Pentanone	mg/kg	---	---
Acetone	mg/kg	---	---
Benzene	mg/kg	---	---
Bromobenzene	mg/kg	---	---
Bromochloromethane	mg/kg	---	---
Bromodichloromethane	mg/kg	---	---
Bromoform	mg/kg	---	---
Bromomethane	mg/kg	---	---
Carbon Disulfide	mg/kg	---	---
Carbon Tetrachloride	mg/kg	---	---
Chlorobenzene	mg/kg	---	---
Chloroethane	mg/kg	---	---
Chloroform	mg/kg	---	---
Chloromethane	mg/kg	---	---
cis-1,2-Dichloroethene	mg/kg	---	---
cis-1,3-Dichloropropene	mg/kg	---	---

Laboratory Sample Designation		1709419-19	
Sample Designation		SED-C-57 (0-7_5') - Dried	
Sample Date		09/14/2017	
Sample Depth			
Soil Type			
Group Designation			
Dibromochloromethane	mg/kg	---	---
Dibromomethane	mg/kg	---	---
Dichlorodifluoromethane	mg/kg	---	---
Diethyl Ether	mg/kg	---	---
Di-isopropyl ether	mg/kg	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---
Ethylbenzene	mg/kg	---	---
Hexachlorobutadiene	mg/kg	---	---
Isopropylbenzene	mg/kg	---	---
Methyl tert-Butyl Ether	mg/kg	---	---
Methylene Chloride	mg/kg	---	---
Naphthalene	mg/kg	---	---
n-Butylbenzene	mg/kg	---	---
n-Propylbenzene	mg/kg	---	---
sec-Butylbenzene	mg/kg	---	---
Styrene	mg/kg	---	---
tert-Butylbenzene	mg/kg	---	---
Tertiary-amyl methyl ether	mg/kg	---	---
Tetrachloroethene	mg/kg	---	---
Tetrahydrofuran	mg/kg	---	---
Toluene	mg/kg	---	---
trans-1,2-Dichloroethene	mg/kg	---	---
trans-1,3-Dichloropropene	mg/kg	---	---
Trichloroethene	mg/kg	---	---
Trichlorofluoromethane	mg/kg	---	---
Vinyl Chloride	mg/kg	---	---
Xylene O	mg/kg	---	---
Xylene P,M	mg/kg	---	---
VOCs			
1,1,1,2-Tetrachloroethane	mg/kg	---	---
1,1,1-Trichloroethane	mg/kg	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---
1,1,2-Trichloroethane	mg/kg	---	---
1,1-Dichloroethane	mg/kg	---	---
1,1-Dichloroethene	mg/kg	---	---
1,1-Dichloropropene	mg/kg	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---
1,2,3-Trichloropropane	mg/kg	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---
1,2-Dibromoethane	mg/kg	---	---
1,2-Dichlorobenzene	mg/kg	---	---
1,2-Dichloroethane	mg/kg	---	---

Laboratory Sample Designation		1709419-19	
Sample Designation		SED-C-57 (0-7_5') - Dried	
Sample Date		09/14/2017	
Sample Depth			
Soil Type			
Group Designation			
1,2-Dichloropropane	mg/kg	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---
1,3-Dichlorobenzene	mg/kg	---	---
1,3-Dichloropropane	mg/kg	---	---
1,4-Dichlorobenzene	mg/kg	---	---
1,4-Dioxane - Screen	mg/kg	---	---
2,2-Dichloropropane	mg/kg	---	---
2-Butanone	mg/kg	---	---
2-Chlorotoluene	mg/kg	---	---
2-Hexanone	mg/kg	---	---
4-Chlorotoluene	mg/kg	---	---
4-Isopropyltoluene	mg/kg	---	---
4-Methyl-2-Pentanone	mg/kg	---	---
Acetone	mg/kg	---	---
Benzene	mg/kg	---	---
Bromobenzene	mg/kg	---	---
Bromochloromethane	mg/kg	---	---
Bromodichloromethane	mg/kg	---	---
Bromoform	mg/kg	---	---
Bromomethane	mg/kg	---	---
Carbon Disulfide	mg/kg	---	---
Carbon Tetrachloride	mg/kg	---	---
Chlorobenzene	mg/kg	---	---
Chloroethane	mg/kg	---	---
Chloroform	mg/kg	---	---
Chloromethane	mg/kg	---	---
cis-1,2-Dichloroethene	mg/kg	---	---
cis-1,3-Dichloropropene	mg/kg	---	---
Dibromochloromethane	mg/kg	---	---
Dibromomethane	mg/kg	---	---
Dichlorodifluoromethane	mg/kg	---	---
Diethyl Ether	mg/kg	---	---
Di-isopropyl ether	mg/kg	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---
Ethylbenzene	mg/kg	---	---
Hexachlorobutadiene	mg/kg	---	---
Isopropylbenzene	mg/kg	---	---
Methyl tert-Butyl Ether	mg/kg	---	---
Methylene Chloride	mg/kg	---	---
Naphthalene	mg/kg	---	---
n-Butylbenzene	mg/kg	---	---
n-Propylbenzene	mg/kg	---	---
sec-Butylbenzene	mg/kg	---	---
Styrene	mg/kg	---	---
tert-Butylbenzene	mg/kg	---	---

Laboratory Sample Designation		1709419-19	
Sample Designation		SED-C-57 (0-7_5') - Dried	
Sample Date		09/14/2017	
Sample Depth			
Soil Type			
Group Designation			
Tertiary-amyl methyl ether	mg/kg	---	---
Tetrachloroethene	mg/kg	---	---
Tetrahydrofuran	mg/kg	---	---
Toluene	mg/kg	---	---
trans-1,2-Dichloroethene	mg/kg	---	---
trans-1,3-Dichloropropene	mg/kg	---	---
Trichloroethene	mg/kg	---	---
Trichlorofluoromethane	mg/kg	---	---
Vinyl Chloride	mg/kg	---	---
Xylene O	mg/kg	---	---
Xylene P,M	mg/kg	---	---
SVOCs			
1,2,4-Trichlorobenzene	mg/kg	---	---
1,2-Dichlorobenzene	mg/kg	---	---
1,3-Dichlorobenzene	mg/kg	---	---
1,4-Dichlorobenzene	mg/kg	---	---
2,4,5-Trichlorophenol	mg/kg	---	---
2,4,6-Trichlorophenol	mg/kg	---	---
2,4-Dichlorophenol	mg/kg	---	---
2,4-Dimethylphenol	mg/kg	---	---
2,4-Dinitrophenol	mg/kg	---	---
2,4-Dinitrotoluene	mg/kg	---	---
2,6-Dinitrotoluene	mg/kg	---	---
2-Chloronaphthalene	mg/kg	---	---
2-Chlorophenol	mg/kg	---	---
2-Methylnaphthalene	mg/kg	---	---
2-Methylphenol	mg/kg	---	---
2-Nitrophenol	mg/kg	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---
3+4-Methylphenol	mg/kg	---	---
4-Bromophenyl-phenylether	mg/kg	---	---
4-Chloroaniline	mg/kg	---	---
4-Nitrophenol	mg/kg	---	---
Acenaphthene	mg/kg	---	---
Acenaphthylene	mg/kg	---	---
Acetophenone	mg/kg	---	---
Aniline	mg/kg	---	---
Anthracene	mg/kg	---	---
Azobenzene	mg/kg	---	---
Benzo(a)anthracene	mg/kg	---	---
Benzo(a)pyrene	mg/kg	---	---
Benzo(b)fluoranthene	mg/kg	---	---
Benzo(g,h,i)perylene	mg/kg	---	---
Benzo(k)fluoranthene	mg/kg	---	---

Laboratory Sample Designation		1709419-19	
Sample Designation		SED-C-57 (0-7_5') - Dried	
Sample Date		09/14/2017	
Sample Depth			
Soil Type			
Group Designation			
bis(2-Chloroethoxy)methane	mg/kg	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---
Butylbenzylphthalate	mg/kg	---	---
Chrysene	mg/kg	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---
Dibenzofuran	mg/kg	---	---
Diethylphthalate	mg/kg	---	---
Dimethylphthalate	mg/kg	---	---
Di-n-butylphthalate	mg/kg	---	---
Di-n-octylphthalate	mg/kg	---	---
Fluoranthene	mg/kg	---	---
Fluorene	mg/kg	---	---
Hexachlorobenzene	mg/kg	---	---
Hexachlorobutadiene	mg/kg	---	---
Hexachloroethane	mg/kg	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---
Isophorone	mg/kg	---	---
Naphthalene	mg/kg	---	---
Nitrobenzene	mg/kg	---	---
N-Nitrosodimethylamine	mg/kg	---	---
Pentachlorophenol	mg/kg	---	---
Phenanthrene	mg/kg	---	---
Phenol	mg/kg	---	---
Pyrene	mg/kg	---	---
Pyridine	mg/kg	---	---
Total Metals			
Arsenic	mg/kg	**239**	-
Barium	mg/kg	108	-
Cadmium	mg/kg	2.16	-
Chromium	mg/kg	**103**	-
Lead	mg/kg	**615**	-
Mercury	mg/kg	3.42	D
Selenium	mg/kg	17	EL, U, D
Silver	mg/kg	2.06	-
Pesticides			
4,4´-DDD	mg/kg	---	---
4,4´-DDE	mg/kg	---	---
4,4´-DDT	mg/kg	---	---
Aldrin	mg/kg	---	---
alpha-BHC	mg/kg	---	---
alpha-Chlordane	mg/kg	---	---

Laboratory Sample Designation		1709419-19	
Sample Designation		SED-C-57 (0-7_5') - Dried	
Sample Date		09/14/2017	
Sample Depth			
Soil Type			
Group Designation			
beta-BHC	mg/kg	---	---
Chlordane (Total)	mg/kg	---	---
delta-BHC	mg/kg	---	---
Dieldrin	mg/kg	---	---
Endosulfan I	mg/kg	---	---
Endosulfan II	mg/kg	---	---
Endosulfan Sulfate	mg/kg	---	---
Endrin	mg/kg	---	---
Endrin Ketone	mg/kg	---	---
gamma-BHC (Lindane)	mg/kg	---	---
gamma-Chlordane	mg/kg	---	---
Heptachlor	mg/kg	---	---
Heptachlor Epoxide	mg/kg	---	---
Hexachlorobenzene	mg/kg	---	---
Methoxychlor	mg/kg	---	---
Toxaphene	mg/kg	---	---
PCBs			
Aroclor 1016	mg/kg	---	---
Aroclor 1221	mg/kg	---	---
Aroclor 1232	mg/kg	---	---
Aroclor 1242	mg/kg	---	---
Aroclor 1248	mg/kg	---	---
Aroclor 1254	mg/kg	---	---
Aroclor 1260	mg/kg	---	---
Aroclor 1262	mg/kg	---	---
Aroclor 1268	mg/kg	---	---
Herbicides			
2,4,5-T	mg/kg	---	---
2,4,5-TP (Silvex)	mg/kg	---	---
2,4-D	mg/kg	---	---
2,4-DB	mg/kg	---	---
Dalapon	mg/kg	---	---
Dicamba	mg/kg	---	---
Dichlorprop	mg/kg	---	---
Dinoseb	mg/kg	---	---
MCPA	mg/kg	---	---
MCPP	mg/kg	---	---
Classical Chemistry			
Corrosivity (pH)	S.U.	---	---
Flashpoint	°F	---	---
Percent Moisture	%	---	---
Reactive Cyanide	mg/kg	---	---

Laboratory Sample Designation		1709419-19	
Sample Designation		SED-C-57 (0-7_5') - Dried	
Sample Date		09/14/2017	
Sample Depth			
Soil Type			
Group Designation			
Reactive Sulfide	mg/kg	---	---
TCLP Metals			
Arsenic	mg/L	---	---
Barium	mg/L	---	---
Cadmium	mg/L	---	---
Chromium	mg/L	---	---
Lead	mg/L	---	---
Mercury	mg/L	---	---
Selenium	mg/L	---	---
Silver	mg/L	---	---

Laboratory Sample Designation		1709464-01		1709464-02		1709464-03		1709464-04		1709464-05		1709464-06		1709464-07		1709464-08		1709464-09		1709464-10	
Sample Designation		SED-C-2 (0-2')		SED-G-2 (1_6-2_0')		SED-C-4 (0-1_5')		SED-G-4 (0_3-0_6')		SED-C-9 (0-1_5')		SED-G-9 (0_9-1_2')		SED-C-6 (0-1_4')		SED-G-6 (0_84-1_12')		SED-C-8 (0-1_3')		SED-G-8 (0_52-0_78')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
VOCs - Low																					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,1,1-Trichloroethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,1,2,2-Tetrachloroethane	mg/kg	---	---	0.003	U	---	---	0.0022	U	---	---	0.0022	U	---	---	0.003	U	---	---	0.0026	U
1,1,2-Trichloroethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,1-Dichloroethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,1-Dichloroethene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,1-Dichloropropene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,2,3-Trichlorobenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,2,3-Trichloropropane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,2,4-Trichlorobenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,2,4-Trimethylbenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,2-Dibromoethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,2-Dichlorobenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,2-Dichloroethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,2-Dichloropropane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,3,5-Trimethylbenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,3-Dichlorobenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,3-Dichloropropane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,4-Dichlorobenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
1,4-Dioxane	mg/kg	---	---	0.152	U	---	---	0.111	U	---	---	0.108	U	---	---	0.152	U	---	---	0.132	U
2,2-Dichloropropane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
2-Butanone	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0109	-	---	---	0.0152	U	---	---	0.0132	U
2-Chlorotoluene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
2-Hexanone	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0108	U	---	---	0.0152	U	---	---	0.0132	U
4-Chlorotoluene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
4-Isopropyltoluene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
4-Methyl-2-Pentanone	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0108	U	---	---	0.0152	U	---	---	0.0132	U
Acetone	mg/kg	---	---	0.0559	-	---	---	0.0302	-	---	---	0.0833	-	---	---	0.0812	-	---	---	0.0584	-
Benzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Bromobenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Bromochloromethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Bromodichloromethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Bromoform	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Bromomethane	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0108	U	---	---	0.0152	U	---	---	0.0132	U
Carbon Disulfide	mg/kg	---	---	0.0132	-	---	---	0.0083	-	---	---	0.0110	-	---	---	0.0218	-	---	---	0.0200	-
Carbon Tetrachloride	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Chlorobenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Chloroethane	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0108	U	---	---	0.0152	U	---	---	0.0132	U
Chloroform	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Chloromethane	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0108	U	---	---	0.0152	U	---	---	0.0132	U
cis-1,2-Dichloroethene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
cis-1,3-Dichloropropene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U

Laboratory Sample Designation		1709464-01		1709464-02		1709464-03		1709464-04		1709464-05		1709464-06		1709464-07		1709464-08		1709464-09		1709464-10	
Sample Designation		SED-C-2 (0-2')		SED-G-2 (1_6-2_0')		SED-C-4 (0-1_5')		SED-G-4 (0_3-0_6')		SED-C-9 (0-1_5')		SED-G-9 (0_9-1_2')		SED-C-6 (0-1_4')		SED-G-6 (0_84-1_12')		SED-C-8 (0-1_3')		SED-G-8 (0_52-0_78')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Dibromochloromethane	mg/kg	---	---	0.003	U	---	---	0.0022	U	---	---	0.0022	U	---	---	0.003	U	---	---	0.0026	U
Dibromomethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Dichlorodifluoromethane	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0108	U	---	---	0.0152	U	---	---	0.0132	U
Diethyl Ether	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Di-isopropyl ether	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Ethyl tertiary-butyl ether	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Ethylbenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Hexachlorobutadiene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Isopropylbenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Methyl tert-Butyl Ether	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Methylene Chloride	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0108	U	---	---	0.0152	U	---	---	0.0132	U
Naphthalene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
n-Butylbenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
n-Propylbenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
sec-Butylbenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Styrene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
tert-Butylbenzene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Tertiary-amyl methyl ether	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Tetrachloroethene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Tetrahydrofuran	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Toluene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
trans-1,2-Dichloroethene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
trans-1,3-Dichloropropene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Trichloroethene	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Trichlorofluoromethane	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Vinyl Chloride	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0108	U	---	---	0.0152	U	---	---	0.0132	U
Xylene O	mg/kg	---	---	0.0076	U	---	---	0.0055	U	---	---	0.0054	U	---	---	0.0076	U	---	---	0.0066	U
Xylene P,M	mg/kg	---	---	0.0152	U	---	---	0.0111	U	---	---	0.0108	U	---	---	0.0152	U	---	---	0.0132	U
SVOCs																					
1,2,4-Trichlorobenzene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
1,2-Dichlorobenzene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
1,3-Dichlorobenzene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
1,4-Dichlorobenzene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2,4,5-Trichlorophenol	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2,4,6-Trichlorophenol	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2,4-Dichlorophenol	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2,4-Dimethylphenol	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2,4-Dinitrophenol	mg/kg	2.49	U	---	---	2.44	U	---	---	2.53	U	---	---	2.52	U	---	---	1.2	U	---	---
2,4-Dinitrotoluene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2,6-Dinitrotoluene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2-Chloronaphthalene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2-Chlorophenol	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2-Methylnaphthalene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
2-Methylphenol	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---

Laboratory Sample Designation		1709464-01		1709464-02		1709464-03		1709464-04		1709464-05		1709464-06		1709464-07		1709464-08		1709464-09		1709464-10	
Sample Designation		SED-C-2 (0-2')		SED-G-2 (1_6-2_0')		SED-C-4 (0-1_5')		SED-G-4 (0_3-0_6')		SED-C-9 (0-1_5')		SED-G-9 (0_9-1_2')		SED-C-6 (0-1_4')		SED-G-6 (0_84-1_12')		SED-C-8 (0-1_3')		SED-G-8 (0_52-0_78')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
2-Nitrophenol	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
3,3´-Dichlorobenzidine	mg/kg	0.995	U	---	---	0.976	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
3+4-Methylphenol	mg/kg	0.995	U	---	---	0.976	U	---	---	1.01	U	---	---	1.01	U	---	---	1.2	U	---	---
4-Bromophenyl-phenylether	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
4-Chloroaniline	mg/kg	0.995	U	---	---	0.976	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
4-Nitrophenol	mg/kg	2.49	U	---	---	2.44	U	---	---	2.53	U	---	---	2.52	U	---	---	3.01	U	---	---
Acenaphthene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Acenaphthylene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Acetophenone	mg/kg	0.995	U	---	---	0.976	U	---	---	1.01	U	---	---	1.01	U	---	---	1.2	U	---	---
Aniline	mg/kg	2.49	U	---	---	2.44	U	---	---	2.53	U	---	---	2.52	U	---	---	3.01	U	---	---
Anthracene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.531	-	---	---	0.503	U	---	---	0.601	U	---	---
Azobenzene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Benzo(a)anthracene	mg/kg	0.553	-	---	---	0.516	-	---	---	1.11	-	---	---	0.503	U	---	---	1.02	-	---	---
Benzo(a)pyrene	mg/kg	0.462	-	---	---	0.406	-	---	---	1.02	-	---	---	0.282	-	---	---	0.891	-	---	---
Benzo(b)fluoranthene	mg/kg	0.557	-	---	---	0.487	U	---	---	1.12	-	---	---	0.503	U	---	---	0.999	-	---	---
Benzo(g,h,i)perylene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Benzo(k)fluoranthene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.903	-	---	---	0.503	U	---	---	0.601	U	---	---
bis(2-Chloroethoxy)methane	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
bis(2-Chloroethyl)ether	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
bis(2-chloroisopropyl)Ether	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	0.528	-	---	---	4.06	-	---	---	2.90	-	---	---	2.64	-	---	---	0.601	U	---	---
Butylbenzylphthalate	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Chrysene	mg/kg	0.670	-	---	---	0.615	-	---	---	1.16	-	---	---	0.382	-	---	---	1.12	-	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.249	U	---	---	0.244	U	---	---	0.265	-	---	---	0.252	U	---	---	0.301	U	---	---
Dibenzofuran	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Diethylphthalate	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Dimethylphthalate	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Di-n-butylphthalate	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Di-n-octylphthalate	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Fluoranthene	mg/kg	1.58	-	---	---	1.46	-	---	---	3.22	-	---	---	0.675	-	---	---	1.61	-	---	---
Fluorene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Hexachlorobenzene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Hexachlorobutadiene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Hexachloroethane	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Isophorone	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Naphthalene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Nitrobenzene	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
N-Nitrosodimethylamine	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Pentachlorophenol	mg/kg	2.49	U	---	---	2.44	U	---	---	2.53	U	---	---	2.52	U	---	---	1.2	U	---	---
Phenanthrene	mg/kg	0.522	-	---	---	0.487	U	---	---	2.11	-	---	---	0.503	U	---	---	0.854	-	---	---
Phenol	mg/kg	0.497	U	---	---	0.487	U	---	---	0.504	U	---	---	0.503	U	---	---	0.601	U	---	---
Pyrene	mg/kg	1.49	-	---	---	1.45	-	---	---	2.97	-	---	---	0.806	-	---	---	2.08	-	---	---
Pyridine	mg/kg	2.49	U	---	---	2.44	U	---	---	2.53	U	---	---	2.52	U	---	---	3.01	U	---	---

Laboratory Sample Designation		1709464-01		1709464-02		1709464-03		1709464-04		1709464-05		1709464-06		1709464-07		1709464-08		1709464-09		1709464-10	
Sample Designation		SED-C-2 (0-2')		SED-G-2 (1_6-2_0')		SED-C-4 (0-1_5')		SED-G-4 (0_3-0_6')		SED-C-9 (0-1_5')		SED-G-9 (0_9-1_2')		SED-C-6 (0-1_4')		SED-G-6 (0_84-1_12')		SED-C-8 (0-1_3')		SED-G-8 (0_52-0_78')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Total Metals																					
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																					
4,4´-DDD	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
4,4´-DDE	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
4,4´-DDT	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Aldrin	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
alpha-BHC	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
alpha-Chlordane	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
beta-BHC	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Chlordane (Total)	mg/kg	0.0303	U	---	---	0.03	U	---	---	0.0309	U	---	---	0.0309	U	---	---	0.0359	U	---	---
delta-BHC	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Dieldrin	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Endosulfan I	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Endosulfan II	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Endosulfan Sulfate	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Endrin	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Endrin Ketone	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
gamma-BHC (Lindane)	mg/kg	0.0023	U	---	---	0.0022	U	---	---	0.0023	U	---	---	0.0023	U	---	---	0.0027	U	---	---
gamma-Chlordane	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Heptachlor	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Heptachlor Epoxide	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Hexachlorobenzene	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Methoxychlor	mg/kg	0.0038	U	---	---	0.0037	U	---	---	0.0039	U	---	---	0.0039	U	---	---	0.0045	U	---	---
Toxaphene	mg/kg	0.189	U	---	---	0.187	U	---	---	0.193	U	---	---	0.193	U	---	---	0.224	U	---	---
PCBs																					
Aroclor 1016	mg/kg	0.07	U	---	---	0.08	U	---	---	0.08	U	---	---	0.08	U	---	---	0.09	U	---	---
Aroclor 1221	mg/kg	0.07	U	---	---	0.08	U	---	---	0.08	U	---	---	0.08	U	---	---	0.09	U	---	---
Aroclor 1232	mg/kg	0.07	U	---	---	0.08	U	---	---	0.08	U	---	---	0.08	U	---	---	0.09	U	---	---
Aroclor 1242	mg/kg	0.07	U	---	---	0.3	-	---	---	0.2	-	---	---	0.4	-	---	---	0.09	U	---	---
Aroclor 1248	mg/kg	0.07	U	---	---	0.08	U	---	---	0.08	U	---	---	0.08	U	---	---	0.09	U	---	---
Aroclor 1254	mg/kg	0.2	-	---	---	0.5	-	---	---	0.7	-	---	---	0.7	-	---	---	0.09	U	---	---
Aroclor 1260	mg/kg	0.2	-	---	---	0.2	-	---	---	0.3	-	---	---	0.3	-	---	---	0.09	U	---	---
Aroclor 1262	mg/kg	0.07	U	---	---	0.08	U	---	---	0.08	U	---	---	0.08	U	---	---	0.09	U	---	---
Aroclor 1268	mg/kg	0.07	U	---	---	0.08	U	---	---	0.08	U	---	---	0.08	U	---	---	0.09	U	---	---

Laboratory Sample Designation		1709464-01		1709464-02		1709464-03		1709464-04		1709464-05		1709464-06		1709464-07		1709464-08		1709464-09		1709464-10	
Sample Designation		SED-C-2 (0-2')		SED-G-2 (1_6-2_0')		SED-C-4 (0-1_5')		SED-G-4 (0_3-0_6')		SED-C-9 (0-1_5')		SED-G-9 (0_9-1_2')		SED-C-6 (0-1_4')		SED-G-6 (0_84-1_12')		SED-C-8 (0-1_3')		SED-G-8 (0_52-0_78')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Herbicides																					
2,4,5-T	mg/kg	0.029	U	---	---	0.142	U, D	---	---	0.028	U	---	---	0.029	U	---	---	0.034	U	---	---
2,4,5-TP (Silvex)	mg/kg	0.029	U	---	---	0.142	U, D	---	---	0.028	U	---	---	0.029	U	---	---	0.034	U	---	---
2,4-D	mg/kg	0.141	U	---	---	0.701	U, D	---	---	0.14	U	---	---	0.141	U	---	---	0.17	U	---	---
2,4-DB	mg/kg	0.143	U	---	---	0.708	U, D	---	---	0.142	U	---	---	0.143	U	---	---	0.171	U	---	---
Dalapon	mg/kg	0.137	U	---	---	0.679	U, D	---	---	0.136	U	---	---	0.137	U	---	---	0.164	U	---	---
Dicamba	mg/kg	0.117	LC, P	---	---	0.14	U, D	---	---	0.217	-	---	---	0.203	P, D	---	---	0.129	LC, P	---	---
Dichlorprop	mg/kg	0.933	LC, P	---	---	1.09	LC, P, D	---	---	0.246	LC, P	---	---	0.141	U	---	---	0.17	U	---	---
Dinoseb	mg/kg	0.143	U	---	---	0.708	U, D	---	---	0.142	U	---	---	0.143	U	---	---	0.171	U	---	---
MCPA	mg/kg	6.98	U	---	---	34.7	U, D	---	---	6.95	U	---	---	6.99	U	---	---	8.39	#	---	---
MCPP	mg/kg	7.06	#	---	---	35.0	#	---	---	7.02	#	---	---	7.06	#	---	---	8.48	#	---	---
Classical Chemistry																					
Corrosivity (pH)	S.U.	7.65	-	---	---	7.00	-	---	---	8.14	-	---	---	7.26	-	---	---	7.55	-	---	---
Flashpoint	°F	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---
Percent Moisture	%	36	-	---	---	34	-	---	---	37	-	---	---	37	-	---	---	46	-	---	---
Reactive Cyanide	mg/kg	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---
Reactive Sulfide	mg/kg	5.0	-	---	---	2	U	---	---	17.7	-	---	---	2	U	---	---	2	U	---	---
TCLP Metals																					
Arsenic	mg/L	0.323	-	---	---	0.116	-	---	---	0.05	U	---	---	0.126	-	---	---	0.527	-	---	---
Barium	mg/L	0.208	-	---	---	0.177	-	---	---	0.210	-	---	---	0.149	-	---	---	0.216	-	---	---
Cadmium	mg/L	0.01	U	---	---	0.0168	-	---	---	0.01	U	---	---	0.0187	-	---	---	0.01	U	---	---
Chromium	mg/L	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---
Lead	mg/L	0.470	-	---	---	0.521	-	---	---	0.181	-	---	---	0.598	-	---	---	1.02	-	---	---
Mercury	mg/L	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---
Selenium	mg/L	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---
Silver	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---

Laboratory Sample Designation		1709464-11		1709464-12		1709464-13		1709464-14		1709464-15	
Sample Designation		SED-C-2 (0-2') - Dried		SED-C-4 (0-1_5') - Dried		SED-C-9 (0-1_5') - Dried		SED-C-6 (0-1_4') - Dried		SED-C-8 (0-1_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth											
Soil Type											
Group Designation											
VOCs - Low											
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709464-11		1709464-12		1709464-13		1709464-14		1709464-15	
Sample Designation		SED-C-2 (0-2') - Dried		SED-C-4 (0-1_5') - Dried		SED-C-9 (0-1_5') - Dried		SED-C-6 (0-1_4') - Dried		SED-C-8 (0-1_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth											
Soil Type											
Group Designation											
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---
SVOCs											
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709464-11		1709464-12		1709464-13		1709464-14		1709464-15	
Sample Designation		SED-C-2 (0-2') - Dried		SED-C-4 (0-1_5') - Dried		SED-C-9 (0-1_5') - Dried		SED-C-6 (0-1_4') - Dried		SED-C-8 (0-1_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth											
Soil Type											
Group Designation											
2-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709464-11		1709464-12		1709464-13		1709464-14		1709464-15	
Sample Designation		SED-C-2 (0-2') - Dried		SED-C-4 (0-1_5') - Dried		SED-C-9 (0-1_5') - Dried		SED-C-6 (0-1_4') - Dried		SED-C-8 (0-1_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth											
Soil Type											
Group Designation											
Total Metals											
Arsenic	mg/kg	**141**	-	**81.7**	-	**54.4**	-	**124**	-	**132**	-
Barium	mg/kg	79.2	-	82.0	-	67.1	-	69.2	-	68.6	-
Cadmium	mg/kg	1.42	-	1.71	-	0.59	-	1.25	-	0.95	-
Chromium	mg/kg	44.8	B	59.2	B	51.9	B	52.4	B	51.9	B
Lead	mg/kg	**460**	-	**374**	-	**333**	-	**351**	-	**513**	-
Mercury	mg/kg	2.05	D	1.65	D	0.851	D	2.11	D	3.43	D
Selenium	mg/kg	39	EL, U, D	49.2	EL, U, D	38.2	EL, U, D	45.5	EL, U, D	46.1	EL, U, D
Silver	mg/kg	1.21	-	1.06	-	0.69	-	1.02	-	0.75	-
Pesticides											
4,4´-DDD	mg/kg	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	---	---	---	---	---	---	---	---
PCBs											
Aroclor 1016	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709464-11		1709464-12		1709464-13		1709464-14		1709464-15	
Sample Designation		SED-C-2 (0-2') - Dried		SED-C-4 (0-1_5') - Dried		SED-C-9 (0-1_5') - Dried		SED-C-6 (0-1_4') - Dried		SED-C-8 (0-1_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth											
Soil Type											
Group Designation											
Herbicides											
2,4,5-T	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	---	---	---	---	---	---	---	---	---	---
Classical Chemistry											
Corrosivity (pH)	S.U.	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---	---	---	---	---	---	---
TCLP Metals											
Arsenic	mg/L	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709465-01		1709465-02		1709465-03		1709465-04		1709465-05		1709465-06		1709465-07		1709465-08		1709465-09		1709465-10	
Sample Designation		SED-C-11 (0-1_6')		SED-G-11 (0-0_32')		SED-C-5 (0-1_6')		SED-G-5 (1_28-1_6')		SED-C-7 (0-2_2')		SED-G-7 (0_88-1_32')		SED-C-34 (0-8_0')		SED-G-34 (6_4-8_0')		SED-C-43 (0-6_6')		SED-G-43 (5_28-6_6')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
VOCs - Low																					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,1,1-Trichloroethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,1,2,2-Tetrachloroethane	mg/kg	---	---	0.0026	U	---	---	0.0025	U	---	---	0.0017	U	---	---	0.003	U	---	---	**0.0076**	U
1,1,2-Trichloroethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,1-Dichloroethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,1-Dichloroethene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,1-Dichloropropene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,2,3-Trichlorobenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,2,3-Trichloropropane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,2,4-Trichlorobenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,2,4-Trimethylbenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0839	-
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,2-Dibromoethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,2-Dichlorobenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0188	-	---	---	1.08	E
1,2-Dichloroethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,2-Dichloropropane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,3,5-Trimethylbenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,3-Dichlorobenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,3-Dichloropropane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
1,4-Dichlorobenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0449	-	---	---	0.0189	U
1,4-Dioxane	mg/kg	---	---	0.132	U	---	---	0.124	U	---	---	0.0846	U	---	---	0.15	U	---	---	**0.379**	U
2,2-Dichloropropane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
2-Butanone	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.0189	-	---	---	0.0634	-
2-Chlorotoluene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.490	-
2-Hexanone	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.015	U	---	---	0.0379	U
4-Chlorotoluene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.113	-
4-Isopropyltoluene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
4-Methyl-2-Pentanone	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.015	U	---	---	0.0379	U
Acetone	mg/kg	---	---	0.0699	-	---	---	0.0306	-	---	---	0.0249	-	---	---	0.207	-	---	---	0.227	-
Benzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0115	-	---	---	0.0343	-
Bromobenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Bromochloromethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Bromodichloromethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Bromoform	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Bromomethane	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.015	U	---	---	0.0379	U
Carbon Disulfide	mg/kg	---	---	0.0066	U	---	---	0.0231	-	---	---	0.0066	-	---	---	0.0372	-	---	---	0.0351	-
Carbon Tetrachloride	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Chlorobenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	**2.00**	E	---	---	0.0189	U
Chloroethane	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.015	U	---	---	0.0379	U
Chloroform	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Chloromethane	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.015	U	---	---	0.0379	U
cis-1,2-Dichloroethene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0199	-
cis-1,3-Dichloropropene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	**0.0189**	U

Laboratory Sample Designation		1709465-01		1709465-02		1709465-03		1709465-04		1709465-05		1709465-06		1709465-07		1709465-08		1709465-09		1709465-10	
Sample Designation		SED-C-11 (0-1_6')		SED-G-11 (0-0_32')		SED-C-5 (0-1_6')		SED-G-5 (1_28-1_6')		SED-C-7 (0-2_2')		SED-G-7 (0_88-1_32')		SED-C-34 (0-8_0')		SED-G-34 (6_4-8_0')		SED-C-43 (0-6_6')		SED-G-43 (5_28-6_6')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Dibromochloromethane	mg/kg	---	---	0.0026	U	---	---	0.0025	U	---	---	0.0017	U	---	---	0.003	U	---	---	**0.0076**	U
Dibromomethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Dichlorodifluoromethane	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.015	U	---	---	0.0379	U
Diethyl Ether	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Di-isopropyl ether	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Ethyl tertiary-butyl ether	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Ethylbenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.163	-
Hexachlorobutadiene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Isopropylbenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0198	-
Methyl tert-Butyl Ether	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Methylene Chloride	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.015	U	---	---	0.0379	U
Naphthalene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.140	-
n-Butylbenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0296	-
n-Propylbenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
sec-Butylbenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Styrene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
tert-Butylbenzene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Tertiary-amyl methyl ether	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Tetrachloroethene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Tetrahydrofuran	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Toluene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.113	-
trans-1,2-Dichloroethene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
trans-1,3-Dichloropropene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	**0.0189**	U
Trichloroethene	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Trichlorofluoromethane	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0189	U
Vinyl Chloride	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.015	U	---	---	0.0379	U
Xylene O	mg/kg	---	---	0.0066	U	---	---	0.0062	U	---	---	0.0042	U	---	---	0.0075	U	---	---	0.0690	-
Xylene P,M	mg/kg	---	---	0.0132	U	---	---	0.0124	U	---	---	0.0085	U	---	---	0.015	U	---	---	0.0700	-
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VOCs																					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.18	U	---	---	6.22	U
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	4.59	-

Laboratory Sample Designation		1709465-01		1709465-02		1709465-03		1709465-04		1709465-05		1709465-06		1709465-07		1709465-08		1709465-09		1709465-10	
Sample Designation		SED-C-11 (0-1_6')		SED-G-11 (0-0_32')		SED-C-5 (0-1_6')		SED-G-5 (1_28-1_6')		SED-C-7 (0-2_2')		SED-G-7 (0_88-1_32')		SED-C-34 (0-8_0')		SED-G-34 (6_4-8_0')		SED-C-43 (0-6_6')		SED-G-43 (5_28-6_6')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	**1.24**	U
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.762**	-	---	---	**1.24**	U
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**127**	U	---	---	**249**	U
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.18	U	---	---	**6.22**	U
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.60	-
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.18	U	---	---	6.22	U
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.18**	U	---	---	**6.22**	U
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.18	U	---	---	**6.22**	U
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**24.4**	-	---	---	**1.24**	U
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.27**	U	---	---	**2.49**	U
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U

Laboratory Sample Designation		1709465-01		1709465-02		1709465-03		1709465-04		1709465-05		1709465-06		1709465-07		1709465-08		1709465-09		1709465-10	
Sample Designation		SED-C-11 (0-1_6')		SED-G-11 (0-0_32')		SED-C-5 (0-1_6')		SED-G-5 (1_28-1_6')		SED-C-7 (0-2_2')		SED-G-7 (0_88-1_32')		SED-C-34 (0-8_0')		SED-G-34 (6_4-8_0')		SED-C-43 (0-6_6')		SED-G-43 (5_28-6_6')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	**1.24**	U
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.18	U	---	---	6.22	U
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	**1.24**	U
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.635**	U	---	---	**1.24**	U
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	**1.24**	U
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.635	U	---	---	1.24	U
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.27	U	---	---	2.49	U
SVOCs																					
1,2,4-Trichlorobenzene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
1,2-Dichlorobenzene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
1,3-Dichlorobenzene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
1,4-Dichlorobenzene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
2,4,5-Trichlorophenol	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
2,4,6-Trichlorophenol	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
2,4-Dichlorophenol	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
2,4-Dimethylphenol	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
2,4-Dinitrophenol	mg/kg	2.95	U	---	---	2.58	U	---	---	2.23	U	---	---	1.58	U	---	---	1.88	U	---	---
2,4-Dinitrotoluene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
2,6-Dinitrotoluene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
2-Chloronaphthalene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
2-Chlorophenol	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
2-Methylnaphthalene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
2-Methylphenol	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
2-Nitrophenol	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
3,3´-Dichlorobenzidine	mg/kg	0.588	U	---	---	0.514	U	---	---	0.89	U	---	---	0.787	U	---	---	0.939	U	---	---
3+4-Methylphenol	mg/kg	1.18	U	---	---	1.03	U	---	---	0.89	U	---	---	1.58	U	---	---	1.88	U	---	---
4-Bromophenyl-phenylether	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
4-Chloroaniline	mg/kg	0.588	U	---	---	0.514	U	---	---	0.89	U	---	---	0.787	U	---	---	0.939	U	---	---
4-Nitrophenol	mg/kg	2.95	U	---	---	2.58	U	---	---	2.23	U	---	---	3.95	U	---	---	4.71	U	---	---
Acenaphthene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Acenaphthylene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Acetophenone	mg/kg	1.18	U	---	---	1.03	U	---	---	0.89	U	---	---	1.58	U	---	---	1.88	U	---	---
Aniline	mg/kg	2.95	U	---	---	2.58	U	---	---	2.23	U	---	---	3.95	U	---	---	4.71	U	---	---
Anthracene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Azobenzene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Benzo(a)anthracene	mg/kg	0.588	U	---	---	0.579	-	---	---	0.559	-	---	---	0.787	U	---	---	0.939	U	---	---
Benzo(a)pyrene	mg/kg	0.393	-	---	---	0.493	-	---	---	0.488	-	---	---	0.483	-	---	---	0.729	-	---	---
Benzo(b)fluoranthene	mg/kg	0.588	U	---	---	0.597	-	---	---	0.507	-	---	---	0.787	U	---	---	0.968	-	---	---
Benzo(g,h,i)perylene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---

Laboratory Sample Designation		1709465-01		1709465-02		1709465-03		1709465-04		1709465-05		1709465-06		1709465-07		1709465-08		1709465-09		1709465-10	
Sample Designation		SED-C-11 (0-1_6')		SED-G-11 (0-0_32')		SED-C-5 (0-1_6')		SED-G-5 (1_28-1_6')		SED-C-7 (0-2_2')		SED-G-7 (0_88-1_32')		SED-C-34 (0-8_0')		SED-G-34 (6_4-8_0')		SED-C-43 (0-6_6')		SED-G-43 (5_28-6_6')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Benzo(k)fluoranthene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
bis(2-Chloroethoxy)methane	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
bis(2-Chloroethyl)ether	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
bis(2-chloroisopropyl)Ether	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	1.81	-	---	---	6.91	-	---	---	2.31	-	---	---	**116**	D	---	---	**204**	D	---	---
Butylbenzylphthalate	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Chrysene	mg/kg	0.352	-	---	---	0.659	-	---	---	0.513	-	---	---	0.539	-	---	---	0.822	-	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.295	U	---	---	0.258	U	---	---	0.223	U	---	---	0.395	U	---	---	0.471	U	---	---
Dibenzofuran	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Diethylphthalate	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Dimethylphthalate	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	**0.787**	U	---	---	**0.939**	U	---	---
Di-n-butylphthalate	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Di-n-octylphthalate	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	1.59	-	---	---	5.91	-	---	---
Fluoranthene	mg/kg	0.588	U	---	---	0.981	-	---	---	0.724	-	---	---	0.806	-	---	---	1.53	-	---	---
Fluorene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Hexachlorobenzene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
Hexachlorobutadiene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Hexachloroethane	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.395	U	---	---	0.471	U	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Isophorone	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Naphthalene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Nitrobenzene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
N-Nitrosodimethylamine	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Pentachlorophenol	mg/kg	2.95	U	---	---	2.58	U	---	---	2.23	U	---	---	1.58	U	---	---	1.88	U	---	---
Phenanthrene	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	1.11	-	---	---
Phenol	mg/kg	0.588	U	---	---	0.514	U	---	---	0.445	U	---	---	0.787	U	---	---	0.939	U	---	---
Pyrene	mg/kg	0.675	-	---	---	1.21	-	---	---	0.984	-	---	---	0.895	-	---	---	1.45	-	---	---
Pyridine	mg/kg	2.95	U	---	---	2.58	U	---	---	2.23	U	---	---	3.95	U	---	---	4.71	U	---	---
Total Metals																					
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																					
4,4´-DDD	mg/kg	0.0044	U	---	---	0.0072	-	---	---	0.0035	U	---	---	0.0117	-	---	---	0.0178	LC, P	---	---
4,4´-DDE	mg/kg	0.0044	U	---	---	0.0047	LC, P	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
4,4´-DDT	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Aldrin	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
alpha-BHC	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---

Laboratory Sample Designation		1709465-01		1709465-02		1709465-03		1709465-04		1709465-05		1709465-06		1709465-07		1709465-08		1709465-09		1709465-10	
Sample Designation		SED-C-11 (0-1_6')		SED-G-11 (0-0_32')		SED-C-5 (0-1_6')		SED-G-5 (1_28-1_6')		SED-C-7 (0-2_2')		SED-G-7 (0_88-1_32')		SED-C-34 (0-8_0')		SED-G-34 (6_4-8_0')		SED-C-43 (0-6_6')		SED-G-43 (5_28-6_6')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
alpha-Chlordane	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
beta-BHC	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Chlordane (Total)	mg/kg	0.0351	U	---	---	0.0323	U	---	---	0.028	U	---	---	0.0472	U	---	---	0.0575	U	---	---
delta-BHC	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Dieldrin	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0141	LC, P	---	---	0.0302	-	---	---
Endosulfan I	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0084	-	---	---	0.0072	U	---	---
Endosulfan II	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Endosulfan Sulfate	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Endrin	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Endrin Ketone	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
gamma-BHC (Lindane)	mg/kg	0.0026	U	---	---	0.0024	U	---	---	0.0021	U	---	---	**0.0035**	U	---	---	**0.0043**	U	---	---
gamma-Chlordane	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Heptachlor	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Heptachlor Epoxide	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Hexachlorobenzene	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Methoxychlor	mg/kg	0.0044	U	---	---	0.004	U	---	---	0.0035	U	---	---	0.0059	U	---	---	0.0072	U	---	---
Toxaphene	mg/kg	0.22	U	---	---	0.202	U	---	---	0.175	U	---	---	0.295	U	---	---	0.36	U	---	---
PCBs																					
Aroclor 1016	mg/kg	0.09	U	---	---	0.08	U	---	---	0.07	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1221	mg/kg	0.09	U	---	---	0.08	U	---	---	0.07	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1232	mg/kg	0.09	U	---	---	0.08	U	---	---	0.07	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1242	mg/kg	0.2	-	---	---	0.2	-	---	---	0.2	-	---	---	0.8	-	---	---	**1.2**	-	---	---
Aroclor 1248	mg/kg	0.09	U	---	---	0.08	U	---	---	0.07	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1254	mg/kg	0.6	-	---	---	0.4	-	---	---	0.3	-	---	---	**1.7**	-	---	---	**2.3**	-	---	---
Aroclor 1260	mg/kg	0.3	-	---	---	0.2	-	---	---	0.07	U	---	---	0.5	-	---	---	0.8	-	---	---
Aroclor 1262	mg/kg	0.09	U	---	---	0.08	U	---	---	0.07	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1268	mg/kg	0.09	U	---	---	0.08	U	---	---	0.07	U	---	---	0.1	U	---	---	0.1	U	---	---
Herbicides																					
2,4,5-T	mg/kg	0.032	U	---	---	0.147	U, D	---	---	0.024	U	---	---	0.046	U	---	---	0.053	U	---	---
2,4,5-TP (Silvex)	mg/kg	0.032	U	---	---	0.767	LC, P, D	---	---	0.024	U	---	---	0.046	U	---	---	0.345	-	---	---
2,4-D	mg/kg	0.157	U	---	---	0.73	U, D	---	---	0.117	U	---	---	0.229	U	---	---	0.26	U	---	---
2,4-DB	mg/kg	0.159	U	---	---	0.737	U, D	---	---	0.118	U	---	---	0.232	U	---	---	0.263	U	---	---
Dalapon	mg/kg	0.152	U	---	---	0.706	U, D	---	---	0.113	U	---	---	0.222	U	---	---	0.252	U	---	---
Dicamba	mg/kg	0.031	U	---	---	0.146	U, D	---	---	0.090	LC, P	---	---	0.251	LC, P	---	---	0.634	LC, P, D	---	---
Dichlorprop	mg/kg	0.157	U	---	---	1.62	LC, P, D	---	---	0.708	LC, P	---	---	0.310	LC, P	---	---	0.616	LC, P	---	---
Dinoseb	mg/kg	0.159	U	---	---	0.737	U, D	---	---	0.118	U	---	---	0.430	LC, P	---	---	0.294	LC, P	---	---
MCPA	mg/kg	7.76	U	---	---	36.1	#	---	---	5.77	U	---	---	11.4	U	---	---	12.9	U	---	---
MCPP	mg/kg	7.84	#	---	---	36.5	#	---	---	5.83	#	---	---	11.5	#	---	---	13.0	#	---	---
Classical Chemistry																					
Corrosivity (pH)	S.U.	7.89	-	---	---	7.47	-	---	---	7.61	-	---	---	7.68	-	---	---	7.44	-	---	---
Flashpoint	°F	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---
Percent Moisture	%	46	-	---	---	38	-	---	---	29	-	---	---	59	-	---	---	65	-	---	---

Laboratory Sample Designation		1709465-01		1709465-02		1709465-03		1709465-04		1709465-05		1709465-06		1709465-07		1709465-08		1709465-09		1709465-10	
Sample Designation		SED-C-11 (0-1_6')		SED-G-11 (0-0_32')		SED-C-5 (0-1_6')		SED-G-5 (1_28-1_6')		SED-C-7 (0-2_2')		SED-G-7 (0_88-1_32')		SED-C-34 (0-8_0')		SED-G-34 (6_4-8_0')		SED-C-43 (0-6_6')		SED-G-43 (5_28-6_6')	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Reactive Cyanide	mg/kg	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---
Reactive Sulfide	mg/kg	22.2	-	---	---	7.6	-	---	---	5.3	-	---	---	5.9	-	---	---	6.8	-	---	---
TCLP Metals																					
Arsenic	mg/L	0.05	U	---	---	0.106	-	---	---	0.228	-	---	---	0.096	-	---	---	0.116	-	---	---
Barium	mg/L	0.107	-	---	---	0.175	-	---	---	0.148	-	---	---	0.162	-	---	---	0.05	U	---	---
Cadmium	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---
Chromium	mg/L	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	0.025	-	---	---
Lead	mg/L	0.05	U	---	---	0.944	-	---	---	1.36	-	---	---	0.05	U	---	---	0.05	U	---	---
Mercury	mg/L	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---
Selenium	mg/L	0.25	U, D	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---
Silver	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---

Laboratory Sample Designation		1709465-11		1709465-12		1709465-13		1709465-14		1709465-15		1709465-16		1709465-17		1709465-18		1709465-19	
Sample Designation		SED-C-41 (0-7_9')		SED-G-41 (6_32-7_9')		SED-C-42 (0-7_3')		SED-G-42 (1_46-2_92')		Trip Blank - 3		SED-C-11 (0-1_6') - Dried		SED-C-5 (0-1_6') - Dried		SED-C-7 (0-2_2') - Dried		SED-C-34 (0-8_0') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
VOCs - Low																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	**0.0068**	U	---	---	**0.0054**	U	0.002	U	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	---	---	**0.339**	U	---	---	**0.269**	U	0.1	U	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	0.394	-	---	---	0.175	-	0.01	U	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	0.017	U	---	---	0.0292	-	0.005	U	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	**0.017**	U	---	---	**0.0135**	U	0.005	U	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709465-11		1709465-12		1709465-13		1709465-14		1709465-15		1709465-16		1709465-17		1709465-18		1709465-19	
Sample Designation		SED-C-41 (0-7_9')		SED-G-41 (6_32-7_9')		SED-C-42 (0-7_3')		SED-G-42 (1_46-2_92')		Trip Blank - 3		SED-C-11 (0-1_6') - Dried		SED-C-5 (0-1_6') - Dried		SED-C-7 (0-2_2') - Dried		SED-C-34 (0-8_0') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Dibromochloromethane	mg/kg	---	---	**0.0068**	U	---	---	**0.0054**	U	0.002	U	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	0.0678	-	---	---	0.0252	-	0.005	U	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	**0.017**	U	---	---	**0.0135**	U	0.005	U	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	0.017	U	---	---	0.0135	U	0.005	U	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	0.0339	U	---	---	0.0269	U	0.01	U	---	---	---	---	---	---	---	---
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	0.0075	U	---	---	---	---	---	---	---	---
VOCs																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709465-11		1709465-12		1709465-13		1709465-14		1709465-15		1709465-16		1709465-17		1709465-18		1709465-19	
Sample Designation		SED-C-41 (0-7_9')		SED-G-41 (6_32-7_9')		SED-C-42 (0-7_3')		SED-G-42 (1_46-2_92')		Trip Blank - 3		SED-C-11 (0-1_6') - Dried		SED-C-5 (0-1_6') - Dried		SED-C-7 (0-2_2') - Dried		SED-C-34 (0-8_0') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709465-11		1709465-12		1709465-13		1709465-14		1709465-15		1709465-16		1709465-17		1709465-18		1709465-19	
Sample Designation		SED-C-41 (0-7_9')		SED-G-41 (6_32-7_9')		SED-C-42 (0-7_3')		SED-G-42 (1_46-2_92')		Trip Blank - 3		SED-C-11 (0-1_6') - Dried		SED-C-5 (0-1_6') - Dried		SED-C-7 (0-2_2') - Dried		SED-C-34 (0-8_0') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																			
1,2,4-Trichlorobenzene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	0.887	U	---	---	4.43	-	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	0.887	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.445	U	---	---	0.669	-	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	1.78	U	---	---	2.06	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	0.887	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	1.78	U	---	---	2.06	U	---	---	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	0.887	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	4.45	U	---	---	5.16	U	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	0.887	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	1.78	U	---	---	2.06	U	---	---	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	4.45	U	---	---	5.16	U	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709465-11		1709465-12		1709465-13		1709465-14		1709465-15		1709465-16		1709465-17		1709465-18		1709465-19	
Sample Designation		SED-C-41 (0-7_9')		SED-G-41 (6_32-7_9')		SED-C-42 (0-7_3')		SED-G-42 (1_46-2_92')		Trip Blank - 3		SED-C-11 (0-1_6') - Dried		SED-C-5 (0-1_6') - Dried		SED-C-7 (0-2_2') - Dried		SED-C-34 (0-8_0') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Benzo(k)fluoranthene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	38.1	D	---	---	**599**	D	---	---	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	0.887	U	---	---	3.49	-	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	**0.887**	U	---	---	**1.03**	U	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	4.37	-	---	---	59.3	D	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	0.445	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	1.78	U	---	---	2.06	U	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	0.887	U	---	---	0.516	U	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	0.887	U	---	---	1.03	U	---	---	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	4.45	U	---	---	5.16	U	---	---	---	---	---	---	---	---	---	---	---	---
Total Metals																			
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	**65.0**	-	**102**	-	**88.3**	-	**83.6**	-
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	59.7	-	72.8	-	48.8	-	80.6	-
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	0.79	-	1.53	-	1.13	-	2.05	-
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	72.9	B	74.1	B	42.4	B	90.8	B
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	**387**	-	**516**	-	**466**	-	**452**	-
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	0.497	-	1.77	D	1.45	D	2.17	D
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	44.1	EL, U, D	49.6	EL, U, D	46.4	EL, U, D	47.6	EL, U, D
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	0.63	-	1.16	-	0.75	-	1.82	-
Pesticides																			
4,4´-DDD	mg/kg	0.0110	-	---	---	0.0352	-	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	0.0065	U	---	---	0.0184	LC, P	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709465-11		1709465-12		1709465-13		1709465-14		1709465-15		1709465-16		1709465-17		1709465-18		1709465-19	
Sample Designation		SED-C-41 (0-7_9')		SED-G-41 (6_32-7_9')		SED-C-42 (0-7_3')		SED-G-42 (1_46-2_92')		Trip Blank - 3		SED-C-11 (0-1_6') - Dried		SED-C-5 (0-1_6') - Dried		SED-C-7 (0-2_2') - Dried		SED-C-34 (0-8_0') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
alpha-Chlordane	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	0.052	U	---	---	0.0636	U	---	---	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	0.0228	-	---	---	0.0184	-	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	0.0081	-	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	**0.0039**	U	---	---	**0.0048**	U	---	---	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	0.0065	U	---	---	0.0079	U	---	---	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	0.325	U	---	---	0.397	U	---	---	---	---	---	---	---	---	---	---	---	---
PCBs																			
Aroclor 1016	mg/kg	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	1.0	-	---	---	**1.4**	-	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	**1.9**	-	---	---	**2.4**	-	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	0.6	-	---	---	0.9	-	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	0.1	U	---	---	0.2	U	---	---	---	---	---	---	---	---	---	---	---	---
Herbicides																			
2,4,5-T	mg/kg	0.051	U	---	---	0.059	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	0.051	U	---	---	0.059	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	0.25	U	---	---	0.29	U	---	---	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	0.253	U	---	---	0.293	U	---	---	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	0.242	U	---	---	0.281	U	---	---	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	0.751	D	---	---	0.193	LC, P	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	0.511	LC, P	---	---	0.608	LC, P	---	---	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	0.322	LC, P	---	---	0.293	U	---	---	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	12.4	U	---	---	14.4	U	---	---	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	12.5	#	---	---	14.5	#	---	---	---	---	---	---	---	---	---	---	---	---
Classical Chemistry																			
Corrosivity (pH)	S.U.	7.05	-	---	---	6.75	-	---	---	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	200	>	---	---	200	>	---	---	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	63	-	---	---	69	-	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709465-11		1709465-12		1709465-13		1709465-14		1709465-15		1709465-16		1709465-17		1709465-18		1709465-19	
Sample Designation		SED-C-41 (0-7_9')		SED-G-41 (6_32-7_9')		SED-C-42 (0-7_3')		SED-G-42 (1_46-2_92')		Trip Blank - 3		SED-C-11 (0-1_6') - Dried		SED-C-5 (0-1_6') - Dried		SED-C-7 (0-2_2') - Dried		SED-C-34 (0-8_0') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017		09/15/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Reactive Cyanide	mg/kg	2	U	---	---	2	U	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	2	U	---	---	2	U	---	---	---	---	---	---	---	---	---	---	---	---
TCLP Metals																			
Arsenic	mg/L	0.134	-	---	---	0.05	U	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	0.138	-	---	---	0.05	U	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	0.01	U	---	---	0.0119	-	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	0.02	U	---	---	0.037	-	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	0.05	U	---	---	0.239	-	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	0.0005	U	---	---	0.0005	U	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	0.1	U	---	---	0.1	U	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	0.01	U	---	---	0.01	U	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709465-20		1709465-21		1709465-22	
Sample Designation		SED-C-43 (0-6_6') - Dried		SED-C-41 (0-7_9') - Dried		SED-C-42 (0-7_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017	
Sample Depth							
Soil Type							
Group Designation							
VOCs - Low							
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---
1,4-Dioxane	mg/kg	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---

Laboratory Sample Designation		1709465-20		1709465-21		1709465-22	
Sample Designation		SED-C-43 (0-6_6') - Dried		SED-C-41 (0-7_9') - Dried		SED-C-42 (0-7_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017	
Sample Depth							
Soil Type							
Group Designation							
Dibromochloromethane	mg/kg	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---
Xylenes (Total)	mg/kg	---	---	---	---	---	---
VOCs							
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---

Laboratory Sample Designation		1709465-20		1709465-21		1709465-22	
Sample Designation		SED-C-43 (0-6_6') - Dried		SED-C-41 (0-7_9') - Dried		SED-C-42 (0-7_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017	
Sample Depth							
Soil Type							
Group Designation							
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---

Laboratory Sample Designation		1709465-20		1709465-21		1709465-22	
Sample Designation		SED-C-43 (0-6_6') - Dried		SED-C-41 (0-7_9') - Dried		SED-C-42 (0-7_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017	
Sample Depth							
Soil Type							
Group Designation							
tert-Butylbenzene	mg/kg	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---
SVOCs							
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---
2-Chlorophenol	mg/kg	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---
2-Methylphenol	mg/kg	---	---	---	---	---	---
2-Nitrophenol	mg/kg	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	---	---	---	---
Aniline	mg/kg	---	---	---	---	---	---
Anthracene	mg/kg	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---

Laboratory Sample Designation		1709465-20		1709465-21		1709465-22	
Sample Designation		SED-C-43 (0-6_6') - Dried		SED-C-41 (0-7_9') - Dried		SED-C-42 (0-7_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017	
Sample Depth							
Soil Type							
Group Designation							
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---
Chrysene	mg/kg	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---	---	---
Dimethylphthalate	mg/kg	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---	---	---
Fluorene	mg/kg	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---
Isophorone	mg/kg	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---	---	---
Phenol	mg/kg	---	---	---	---	---	---
Pyrene	mg/kg	---	---	---	---	---	---
Pyridine	mg/kg	---	---	---	---	---	---
Total Metals							
Arsenic	mg/kg	**115**	-	**141**	-	**104**	-
Barium	mg/kg	93.8	-	92.0	-	87.3	-
Cadmium	mg/kg	2.16	-	1.95	-	1.53	-
Chromium	mg/kg	**113**	B	95.0	B	**118**	B
Lead	mg/kg	**455**	-	**496**	-	**333**	-
Mercury	mg/kg	1.89	D	2.80	D	2.28	D
Selenium	mg/kg	46.6	EL, U, D	45	EL, U, D	44.3	EL, U, D
Silver	mg/kg	2.30	-	2.23	-	3.52	-
Pesticides							
4,4´-DDD	mg/kg	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---	---	---
Aldrin	mg/kg	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---	---	---

Laboratory Sample Designation		1709465-20		1709465-21		1709465-22	
Sample Designation		SED-C-43 (0-6_6') - Dried		SED-C-41 (0-7_9') - Dried		SED-C-42 (0-7_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017	
Sample Depth							
Soil Type							
Group Designation							
alpha-Chlordane	mg/kg	---	---	---	---	---	---
beta-BHC	mg/kg	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---	---	---
Endosulfan II	mg/kg	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---
Endrin	mg/kg	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---	---	---
Heptachlor	mg/kg	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	---	---	---	---
PCBs							
Aroclor 1016	mg/kg	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---	---	---
Aroclor 1254	mg/kg	---	---	---	---	---	---
Aroclor 1260	mg/kg	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---	---	---
Herbicides							
2,4,5-T	mg/kg	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---
2,4-D	mg/kg	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	---	---	---	---
Dalapon	mg/kg	---	---	---	---	---	---
Dicamba	mg/kg	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	---	---	---	---
MCPA	mg/kg	---	---	---	---	---	---
MCPP	mg/kg	---	---	---	---	---	---
Classical Chemistry							
Corrosivity (pH)	S.U.	---	---	---	---	---	---
Flashpoint	°F	---	---	---	---	---	---
Percent Moisture	%	---	---	---	---	---	---

Laboratory Sample Designation		1709465-20		1709465-21		1709465-22	
Sample Designation		SED-C-43 (0-6_6') - Dried		SED-C-41 (0-7_9') - Dried		SED-C-42 (0-7_3') - Dried	
Sample Date		09/15/2017		09/15/2017		09/15/2017	
Sample Depth							
Soil Type							
Group Designation							
Reactive Cyanide	mg/kg	---	---	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---	---	---
TCLP Metals							
Arsenic	mg/L	---	---	---	---	---	---
Barium	mg/L	---	---	---	---	---	---
Cadmium	mg/L	---	---	---	---	---	---
Chromium	mg/L	---	---	---	---	---	---
Lead	mg/L	---	---	---	---	---	---
Mercury	mg/L	---	---	---	---	---	---
Selenium	mg/L	---	---	---	---	---	---
Silver	mg/L	---	---	---	---	---	---

Laboratory Sample Designation		1709501-01		1709501-02		1709501-03		1709501-04		1709501-05		1709501-06		1709501-07		1709501-08		1709501-09	
Sample Designation		SED-C-63 (0-3_7')		SED-G-63 (2_96-3_7')		SED-C-61 (0-6_3')		SED-G-61 (5_04-6_3')		SED-C-62 (0-5_8')		SED-G-62 (4_64-5_8')		SED-C-60 (0-5_8')		SED-G-60 (4_64-5_8')		SED-C-1 (0-1_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
VOCs - Low																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,1,1-Trichloroethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	0.0047	U	---	---	**0.0093**	U	---	---	**0.0112**	U	---	---	**0.0119**	U	---	---
1,1,2-Trichloroethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,1-Dichloroethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,1-Dichloroethene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,1-Dichloropropene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,2,3-Trichloropropane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0699	-	---	---	0.0281	U	---	---	0.0297	U	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,2-Dibromoethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,2-Dichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0589	-	---	---	0.0281	U	---	---	0.0297	U	---	---
1,2-Dichloroethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,2-Dichloropropane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0364	-	---	---	0.0281	U	---	---	0.0297	U	---	---
1,3-Dichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,3-Dichloropropane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,4-Dichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
1,4-Dioxane	mg/kg	---	---	**0.236**	U	---	---	**0.464**	U	---	---	**0.561**	U	---	---	**0.595**	U	---	---
2,2-Dichloropropane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
2-Butanone	mg/kg	---	---	0.0275	-	---	---	0.0464	U	---	---	0.0561	U	---	---	0.253	-	---	---
2-Chlorotoluene	mg/kg	---	---	0.0118	U	---	---	0.520	-	---	---	0.0299	-	---	---	0.0297	U	---	---
2-Hexanone	mg/kg	---	---	0.0236	U	---	---	0.0464	U	---	---	0.0561	U	---	---	0.0595	U	---	---
4-Chlorotoluene	mg/kg	---	---	0.0118	U	---	---	0.128	-	---	---	0.0281	U	---	---	0.0297	U	---	---
4-Isopropyltoluene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	0.0236	U	---	---	0.0464	U	---	---	0.0561	U	---	---	0.0595	U	---	---
Acetone	mg/kg	---	---	0.229	-	---	---	0.251	-	---	---	0.297	-	---	---	1.66	-	---	---
Benzene	mg/kg	---	---	0.0118	U	---	---	0.0326	-	---	---	0.0308	-	---	---	0.0297	U	---	---
Bromobenzene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Bromochloromethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Bromodichloromethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Bromoform	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Bromomethane	mg/kg	---	---	0.0236	U	---	---	0.0464	U	---	---	0.0561	U	---	---	0.0595	U	---	---
Carbon Disulfide	mg/kg	---	---	0.0118	U	---	---	0.0299	-	---	---	0.0281	U	---	---	0.0416	-	---	---
Carbon Tetrachloride	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Chlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0569	-	---	---	0.0281	U	---	---	0.0751	-	---	---
Chloroethane	mg/kg	---	---	0.0236	U	---	---	0.0464	U	---	---	0.0561	U	---	---	0.0595	U	---	---
Chloroform	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Chloromethane	mg/kg	---	---	0.0236	U	---	---	0.0464	U	---	---	0.0561	U	---	---	0.0595	U	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	**0.0118**	U	---	---	**0.0232**	U	---	---	**0.0281**	U	---	---	**0.0297**	U	---	---

Laboratory Sample Designation		1709501-01		1709501-02		1709501-03		1709501-04		1709501-05		1709501-06		1709501-07		1709501-08		1709501-09	
Sample Designation		SED-C-63 (0-3_7')		SED-G-63 (2_96-3_7')		SED-C-61 (0-6_3')		SED-G-61 (5_04-6_3')		SED-C-62 (0-5_8')		SED-G-62 (4_64-5_8')		SED-C-60 (0-5_8')		SED-G-60 (4_64-5_8')		SED-C-1 (0-1_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Dibromochloromethane	mg/kg	---	---	0.0047	U	---	---	**0.0093**	U	---	---	**0.0112**	U	---	---	**0.0119**	U	---	---
Dibromomethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Dichlorodifluoromethane	mg/kg	---	---	0.0236	U	---	---	0.0464	U	---	---	0.0561	U	---	---	0.0595	U	---	---
Diethyl Ether	mg/kg	---	---	0.0118	U	---	---	0.0233	-	---	---	0.0433	-	---	---	0.0311	-	---	---
Di-isopropyl ether	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Ethylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0930	-	---	---	0.0281	U	---	---	0.0297	U	---	---
Hexachlorobutadiene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Isopropylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Methylene Chloride	mg/kg	---	---	0.0236	U	---	---	0.0464	U	---	---	0.0561	U	---	---	0.0595	U	---	---
Naphthalene	mg/kg	---	---	0.0118	U	---	---	0.220	-	---	---	0.0324	-	---	---	0.0361	-	---	---
n-Butylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0279	-	---	---	0.0281	U	---	---	0.0297	U	---	---
n-Propylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
sec-Butylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Styrene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
tert-Butylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Tetrachloroethene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Tetrahydrofuran	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Toluene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	**0.0118**	U	---	---	**0.0232**	U	---	---	**0.0281**	U	---	---	**0.0297**	U	---	---
Trichloroethene	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Trichlorofluoromethane	mg/kg	---	---	0.0118	U	---	---	0.0232	U	---	---	0.0281	U	---	---	0.0297	U	---	---
Vinyl Chloride	mg/kg	---	---	0.0236	U	---	---	0.0464	U	---	---	0.0561	U	---	---	0.0595	U	---	---
Xylene O	mg/kg	---	---	0.0118	U	---	---	0.0719	-	---	---	0.0281	U	---	---	0.0297	U	---	---
Xylene P,M	mg/kg	---	---	0.0236	U	---	---	0.0464	U	---	---	0.0561	U	---	---	0.0595	U	---	---
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																			
1,2,4-Trichlorobenzene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
1,2-Dichlorobenzene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.06	-	---	---	0.434	U
1,3-Dichlorobenzene	mg/kg	0.911	U	---	---	0.506	U	---	---	0.927	U	---	---	0.513	U	---	---	0.434	U
1,4-Dichlorobenzene	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
2,4,5-Trichlorophenol	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
2,4,6-Trichlorophenol	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
2,4-Dichlorophenol	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
2,4-Dimethylphenol	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
2,4-Dinitrophenol	mg/kg	1.82	U	---	---	2.02	U	---	---	1.86	U	---	---	2.05	U	---	---	2.17	U
2,4-Dinitrotoluene	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
2,6-Dinitrotoluene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
2-Chloronaphthalene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
2-Chlorophenol	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
2-Methylnaphthalene	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U

Laboratory Sample Designation		1709501-01		1709501-02		1709501-03		1709501-04		1709501-05		1709501-06		1709501-07		1709501-08		1709501-09	
Sample Designation		SED-C-63 (0-3_7')		SED-G-63 (2_96-3_7')		SED-C-61 (0-6_3')		SED-G-61 (5_04-6_3')		SED-C-62 (0-5_8')		SED-G-62 (4_64-5_8')		SED-C-60 (0-5_8')		SED-G-60 (4_64-5_8')		SED-C-1 (0-1_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
2-Methylphenol	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
2-Nitrophenol	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
3,3´-Dichlorobenzidine	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.869	U
3+4-Methylphenol	mg/kg	1.82	U	---	---	2.02	U	---	---	1.86	U	---	---	2.05	U	---	---	0.869	U
4-Bromophenyl-phenylether	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
4-Chloroaniline	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.869	U
4-Nitrophenol	mg/kg	4.57	U	---	---	5.06	U	---	---	4.65	U	---	---	5.13	U	---	---	2.17	U
Acenaphthene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Acenaphthylene	mg/kg	0.911	U	---	---	0.506	U	---	---	0.927	U	---	---	0.513	U	---	---	0.434	U
Acetophenone	mg/kg	1.82	U	---	---	2.02	U	---	---	1.86	U	---	---	2.05	U	---	---	0.869	U
Aniline	mg/kg	4.57	U	---	---	5.06	U	---	---	4.65	U	---	---	5.13	U	---	---	2.17	U
Anthracene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Azobenzene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Benzo(a)anthracene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Benzo(a)pyrene	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.240	-
Benzo(b)fluoranthene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Benzo(g,h,i)perylene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Benzo(k)fluoranthene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
bis(2-Chloroethoxy)methane	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
bis(2-Chloroethyl)ether	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
bis(2-chloroisopropyl)Ether	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
bis(2-Ethylhexyl)phthalate	mg/kg	66.4	D	---	---	**293**	D	---	---	**126**	D	---	---	**147**	D	---	---	0.434	U
Butylbenzylphthalate	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Chrysene	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.224	-
Dibenzo(a,h)Anthracene	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.217	U
Dibenzofuran	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Diethylphthalate	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Dimethylphthalate	mg/kg	**0.911**	U	---	---	**1.01**	U	---	---	**0.927**	U	---	---	**1.02**	U	---	---	0.434	U
Di-n-butylphthalate	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Di-n-octylphthalate	mg/kg	2.46	-	---	---	21.7	-	---	---	11.8	-	---	---	47.9	D	---	---	0.434	U
Fluoranthene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Fluorene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Hexachlorobenzene	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
Hexachlorobutadiene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Hexachloroethane	mg/kg	0.457	U	---	---	0.506	U	---	---	0.465	U	---	---	0.513	U	---	---	0.434	U
Indeno(1,2,3-cd)Pyrene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Isophorone	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Naphthalene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Nitrobenzene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
N-Nitrosodimethylamine	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Pentachlorophenol	mg/kg	1.82	U	---	---	2.02	U	---	---	1.86	U	---	---	2.05	U	---	---	2.17	U
Phenanthrene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Phenol	mg/kg	0.911	U	---	---	0.506	U	---	---	0.927	U	---	---	0.513	U	---	---	0.434	U
Pyrene	mg/kg	0.911	U	---	---	1.01	U	---	---	0.927	U	---	---	1.02	U	---	---	0.434	U
Pyridine	mg/kg	4.57	U	---	---	5.06	U	---	---	4.65	U	---	---	5.13	U	---	---	2.17	U

Laboratory Sample Designation		1709501-01		1709501-02		1709501-03		1709501-04		1709501-05		1709501-06		1709501-07		1709501-08		1709501-09	
Sample Designation		SED-C-63 (0-3_7')		SED-G-63 (2_96-3_7')		SED-C-61 (0-6_3')		SED-G-61 (5_04-6_3')		SED-C-62 (0-5_8')		SED-G-62 (4_64-5_8')		SED-C-60 (0-5_8')		SED-G-60 (4_64-5_8')		SED-C-1 (0-1_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Total Metals																			
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																			
4,4´-DDD	mg/kg	0.0068	U	---	---	0.0205	-	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
4,4´-DDE	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
4,4´-DDT	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Aldrin	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
alpha-BHC	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
alpha-Chlordane	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0111	LC, P	---	---	0.0032	U
beta-BHC	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Chlordane (Total)	mg/kg	0.0544	U	---	---	0.0614	U	---	---	0.0586	U	---	---	0.0843	U	---	---	0.0258	U
delta-BHC	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Dieldrin	mg/kg	0.0068	U	---	---	0.0118	LC, P	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Endosulfan I	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Endosulfan II	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0225	LC, P	---	---	0.0032	U
Endosulfan Sulfate	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Endrin	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Endrin Ketone	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
gamma-BHC (Lindane)	mg/kg	**0.0050**	-	---	---	**0.0046**	U	---	---	**0.0044**	U	---	---	**0.0078**	LC, P	---	---	0.0019	U
gamma-Chlordane	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Heptachlor	mg/kg	0.0253	-	---	---	0.0077	U	---	---	0.0117	-	---	---	0.0541	LC, P	---	---	0.0032	U
Heptachlor Epoxide	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Hexachlorobenzene	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Methoxychlor	mg/kg	0.0068	U	---	---	0.0077	U	---	---	0.0073	U	---	---	0.0105	U	---	---	0.0032	U
Toxaphene	mg/kg	0.34	U	---	---	0.384	U	---	---	0.367	U	---	---	0.527	U	---	---	0.161	U
PCBs																			
Aroclor 1016	mg/kg	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.2	U	---	---	0.06	U
Aroclor 1221	mg/kg	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.2	U	---	---	0.06	U
Aroclor 1232	mg/kg	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.2	U	---	---	0.06	U
Aroclor 1242	mg/kg	0.7	-	---	---	0.2	U	---	---	1.0	-	---	---	0.2	U	---	---	0.06	U
Aroclor 1248	mg/kg	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	**20.9**	D	---	---	0.06	U
Aroclor 1254	mg/kg	0.8	-	---	---	0.2	-	---	---	**2.1**	-	---	---	**12.0**	D	---	---	0.06	U
Aroclor 1260	mg/kg	0.1	U	---	---	0.2	U	---	---	0.6	-	---	---	**2.1**	-	---	---	0.06	U
Aroclor 1262	mg/kg	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.2	U	---	---	0.06	U
Aroclor 1268	mg/kg	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.2	U	---	---	0.06	U

Laboratory Sample Designation		1709501-01		1709501-02		1709501-03		1709501-04		1709501-05		1709501-06		1709501-07		1709501-08		1709501-09	
Sample Designation		SED-C-63 (0-3_7')		SED-G-63 (2_96-3_7')		SED-C-61 (0-6_3')		SED-G-61 (5_04-6_3')		SED-C-62 (0-5_8')		SED-G-62 (4_64-5_8')		SED-C-60 (0-5_8')		SED-G-60 (4_64-5_8')		SED-C-1 (0-1_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Herbicides																			
2,4,5-T	mg/kg	0.241	U, D	---	---	0.057	U	---	---	0.056	U	---	---	0.073	U	---	---	0.025	U
2,4,5-TP (Silvex)	mg/kg	0.685	D	---	---	0.373	LC, P	---	---	0.299	LC, P	---	---	0.073	U	---	---	0.025	U
2,4-D	mg/kg	1.19	U, D	---	---	0.283	U	---	---	0.276	U	---	---	0.359	U	---	---	0.124	U
2,4-DB	mg/kg	1.21	U, D	---	---	0.286	U	---	---	0.279	U	---	---	0.363	U	---	---	0.125	U
Dalapon	mg/kg	1.16	U, D	---	---	0.274	U	---	---	0.267	U	---	---	0.348	U	---	---	0.12	U
Dicamba	mg/kg	0.296	LC, P, D	---	---	0.057	U	---	---	0.346	LC, P	---	---	0.072	U	---	---	0.025	U
Dichlorprop	mg/kg	2.78	LC, P, D	---	---	0.528	LC, P	---	---	1.17	LC, P	---	---	2.55	LC, P	---	---	0.124	U
Dinoseb	mg/kg	1.21	U, D	---	---	0.286	U	---	---	0.481	LC, P	---	---	0.363	U	---	---	0.125	U
MCPA	mg/kg	59	U, D	---	---	14	U	---	---	13.6	U	---	---	17.8	U	---	---	6.13	U
MCPP	mg/kg	59.7	#	---	---	14.2	#	---	---	13.8	#	---	---	18.0	#	---	---	6.20	#
Classical Chemistry																			
Corrosivity (pH)	S.U.	7.63	-	---	---	6.91	-	---	---	7.32	-	---	---	7.10	-	---	---	7.76	-
Flashpoint	°F	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>
Percent Moisture	%	65	-	---	---	68	-	---	---	66	-	---	---	77	-	---	---	26	-
Reactive Cyanide	mg/kg	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U
Reactive Sulfide	mg/kg	13.8	-	---	---	2	U	---	---	3.8	-	---	---	14.8	-	---	---	2	U
TCLP Metals																			
Arsenic	mg/L	0.05	U	---	---	0.355	-	---	---	0.05	U	---	---	0.136	-	---	---	0.136	-
Barium	mg/L	0.068	-	---	---	0.05	U	---	---	0.071	-	---	---	0.171	-	---	---	0.187	-
Cadmium	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U
Chromium	mg/L	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U
Lead	mg/L	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	1.29	-
Mercury	mg/L	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U
Selenium	mg/L	0.5	U, D	---	---	0.3	U, D	---	---	0.5	U, D	---	---	0.3	U, D	---	---	0.1	U
Silver	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U

Laboratory Sample Designation		1709501-10		1709501-11		1709501-12		1709501-13		1709501-14		1709501-15	
Sample Designation		Trip Blank-4		SED-C-63 (0-3_7') - Dried		SED-C-61 (0-6_3') - Dried		SED-C-62 (0-5_8') - Dried		SED-C-60 (0-5_8') - Dried		SED-C-1 (0-1_5') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth													
Soil Type													
Group Designation													
VOCs - Low													
1,1,1,2-Tetrachloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	0.002	U	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	0.1	U	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709501-10		1709501-11		1709501-12		1709501-13		1709501-14		1709501-15	
Sample Designation		Trip Blank-4		SED-C-63 (0-3_7') - Dried		SED-C-61 (0-6_3') - Dried		SED-C-62 (0-5_8') - Dried		SED-C-60 (0-5_8') - Dried		SED-C-1 (0-1_5') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth													
Soil Type													
Group Designation													
Dibromochloromethane	mg/kg	0.002	U	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	0.005	U	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	0.01	U	---	---	---	---	---	---	---	---	---	---
Xylenes (Total)	mg/kg	0.0075	U	---	---	---	---	---	---	---	---	---	---
SVOCs													
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709501-10		1709501-11		1709501-12		1709501-13		1709501-14		1709501-15	
Sample Designation		Trip Blank-4		SED-C-63 (0-3_7') - Dried		SED-C-61 (0-6_3') - Dried		SED-C-62 (0-5_8') - Dried		SED-C-60 (0-5_8') - Dried		SED-C-1 (0-1_5') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth													
Soil Type													
Group Designation													
2-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709501-10		1709501-11		1709501-12		1709501-13		1709501-14		1709501-15	
Sample Designation		Trip Blank-4		SED-C-63 (0-3_7') - Dried		SED-C-61 (0-6_3') - Dried		SED-C-62 (0-5_8') - Dried		SED-C-60 (0-5_8') - Dried		SED-C-1 (0-1_5') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth													
Soil Type													
Group Designation													
Total Metals													
Arsenic	mg/kg	---	---	**120**	-	**253**	-	**157**	-	**302**	-	**51.6**	-
Barium	mg/kg	---	---	70.1	-	135	-	86.9	-	102	-	40.2	-
Cadmium	mg/kg	---	---	2.96	-	1.35	-	2.33	-	2.13	-	2.95	-
Chromium	mg/kg	---	---	**138**	-	**104**	-	**114**	-	**116**	-	26.6	-
Lead	mg/kg	---	---	**421**	-	**367**	-	**440**	-	**356**	-	**240**	-
Mercury	mg/kg	---	---	2.22	D	2.16	D	2.92	D	2.34	D	1.70	D
Selenium	mg/kg	---	---	20	EL, U, D	18.4	EL, U, D	18.4	EL, U, D	19.9	EL, U, D	19.6	EL, U, D
Silver	mg/kg	---	---	2.57	-	1.57	-	2.08	-	1.37	-	0.61	-
Pesticides													
4,4´-DDD	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
PCBs													
Aroclor 1016	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709501-10		1709501-11		1709501-12		1709501-13		1709501-14		1709501-15	
Sample Designation		Trip Blank-4		SED-C-63 (0-3_7') - Dried		SED-C-61 (0-6_3') - Dried		SED-C-62 (0-5_8') - Dried		SED-C-60 (0-5_8') - Dried		SED-C-1 (0-1_5') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth													
Soil Type													
Group Designation													
Herbicides													
2,4,5-T	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Classical Chemistry													
Corrosivity (pH)	S.U.	---	---	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	---	---	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---
TCLP Metals													
Arsenic	mg/L	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-01		1709502-02		1709502-03		1709502-04		1709502-05		1709502-06		1709502-07		1709502-08		1709502-09		1709502-10	
Sample Designation		SED-G-1 (1_2-1_5')		SED-C-3 (0-2_0')		SED-G-3 (1_2-1_6')		SED-C-80 (0-2_0')		SED-G-80 (0_8-1_2')		SED-C-44 (0-0_7')		SED-G-44 (5_6-7_0')		SED-C-45 (0-7_9')		SED-G-45 (6_32-7_9')		SED-C-47 (0-8_1')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
VOCs - Low																					
1,1,1,2-Tetrachloroethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,1,1-Trichloroethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,1,2,2-Tetrachloroethane	mg/kg	0.002	U	---	---	0.0028	U	---	---	**0.0101**	U	---	---	**0.0073**	U	---	---	**0.0074**	U	---	---
1,1,2-Trichloroethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,1-Dichloroethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,1-Dichloroethene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,1-Dichloropropene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,2,3-Trichlorobenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,2,3-Trichloropropane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,2,4-Trichlorobenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,2,4-Trimethylbenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,2-Dibromoethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,2-Dichlorobenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,2-Dichloroethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,2-Dichloropropane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,3,5-Trimethylbenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,3-Dichlorobenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,3-Dichloropropane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,4-Dichlorobenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
1,4-Dioxane	mg/kg	0.102	U	---	---	0.142	U	---	---	**0.504**	U	---	---	**0.365**	U	---	---	**0.368**	U	---	---
2,2-Dichloropropane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
2-Butanone	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---
2-Chlorotoluene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
2-Hexanone	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---
4-Chlorotoluene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
4-Isopropyltoluene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
4-Methyl-2-Pentanone	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---
Acetone	mg/kg	0.0124	-	---	---	0.0242	-	---	---	0.159	-	---	---	0.125	-	---	---	0.165	-	---	---
Benzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Bromobenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Bromochloromethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Bromodichloromethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Bromoform	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Bromomethane	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---
Carbon Disulfide	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Carbon Tetrachloride	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Chlorobenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Chloroethane	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---
Chloroform	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Chloromethane	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---
cis-1,2-Dichloroethene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
cis-1,3-Dichloropropene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	**0.0252**	U	---	---	**0.0183**	U	---	---	**0.0184**	U	---	---
Dibromochloromethane	mg/kg	0.002	U	---	---	0.0028	U	---	---	**0.0101**	U	---	---	**0.0073**	U	---	---	**0.0074**	U	---	---
Dibromomethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Dichlorodifluoromethane	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---

Laboratory Sample Designation		1709502-01		1709502-02		1709502-03		1709502-04		1709502-05		1709502-06		1709502-07		1709502-08		1709502-09		1709502-10	
Sample Designation		SED-G-1 (1_2-1_5')		SED-C-3 (0-2_0')		SED-G-3 (1_2-1_6')		SED-C-80 (0-2_0')		SED-G-80 (0_8-1_2')		SED-C-44 (0-0_7')		SED-G-44 (5_6-7_0')		SED-C-45 (0-7_9')		SED-G-45 (6_32-7_9')		SED-C-47 (0-8_1')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Diethyl Ether	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0355	-	---	---	0.0582	-	---	---	0.0344	-	---	---
Di-isopropyl ether	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Ethyl tertiary-butyl ether	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Ethylbenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Hexachlorobutadiene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Isopropylbenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Methyl tert-Butyl Ether	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Methylene Chloride	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---
Naphthalene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
n-Butylbenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
n-Propylbenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
sec-Butylbenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Styrene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
tert-Butylbenzene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Tertiary-amyl methyl ether	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Tetrachloroethene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Tetrahydrofuran	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Toluene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
trans-1,2-Dichloroethene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
trans-1,3-Dichloropropene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	**0.0252**	U	---	---	**0.0183**	U	---	---	**0.0184**	U	---	---
Trichloroethene	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Trichlorofluoromethane	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Vinyl Chloride	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---
Xylene O	mg/kg	0.0051	U	---	---	0.0071	U	---	---	0.0252	U	---	---	0.0183	U	---	---	0.0184	U	---	---
Xylene P,M	mg/kg	0.0102	U	---	---	0.0142	U	---	---	0.0504	U	---	---	0.0365	U	---	---	0.0368	U	---	---
VOCs																					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-01		1709502-02		1709502-03		1709502-04		1709502-05		1709502-06		1709502-07		1709502-08		1709502-09		1709502-10	
Sample Designation		SED-G-1 (1_2-1_5')		SED-C-3 (0-2_0')		SED-G-3 (1_2-1_6')		SED-C-80 (0-2_0')		SED-G-80 (0_8-1_2')		SED-C-44 (0-0_7')		SED-G-44 (5_6-7_0')		SED-C-45 (0-7_9')		SED-G-45 (6_32-7_9')		SED-C-47 (0-8_1')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-01		1709502-02		1709502-03		1709502-04		1709502-05		1709502-06		1709502-07		1709502-08		1709502-09		1709502-10	
Sample Designation		SED-G-1 (1_2-1_5')		SED-C-3 (0-2_0')		SED-G-3 (1_2-1_6')		SED-C-80 (0-2_0')		SED-G-80 (0_8-1_2')		SED-C-44 (0-0_7')		SED-G-44 (5_6-7_0')		SED-C-45 (0-7_9')		SED-G-45 (6_32-7_9')		SED-C-47 (0-8_1')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																					
1,2,4-Trichlorobenzene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
1,2-Dichlorobenzene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
1,3-Dichlorobenzene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
1,4-Dichlorobenzene	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
2,4,5-Trichlorophenol	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
2,4,6-Trichlorophenol	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
2,4-Dichlorophenol	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
2,4-Dimethylphenol	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
2,4-Dinitrophenol	mg/kg	---	---	2.91	U	---	---	1.65	U	---	---	1.75	U	---	---	1.73	U	---	---	1.96	U
2,4-Dinitrotoluene	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
2,6-Dinitrotoluene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
2-Chloronaphthalene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
2-Chlorophenol	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
2-Methylnaphthalene	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
2-Methylphenol	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
2-Nitrophenol	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
3,3´-Dichlorobenzidine	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
3+4-Methylphenol	mg/kg	---	---	1.16	U	---	---	1.65	U	---	---	1.75	U	---	---	1.73	U	---	---	1.96	U
4-Bromophenyl-phenylether	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
4-Chloroaniline	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
4-Nitrophenol	mg/kg	---	---	2.91	U	---	---	4.12	U	---	---	4.38	U	---	---	4.32	U	---	---	4.91	U
Acenaphthene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Acenaphthylene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Acetophenone	mg/kg	---	---	1.16	U	---	---	1.65	U	---	---	1.75	U	---	---	1.73	U	---	---	1.96	U
Aniline	mg/kg	---	---	2.91	U	---	---	4.12	U	---	---	4.38	U	---	---	4.32	U	---	---	4.91	U
Anthracene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Azobenzene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Benzo(a)anthracene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Benzo(a)pyrene	mg/kg	---	---	0.291	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
Benzo(b)fluoranthene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Benzo(g,h,i)perylene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Benzo(k)fluoranthene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
bis(2-Chloroethoxy)methane	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
bis(2-Chloroethyl)ether	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
bis(2-chloroisopropyl)Ether	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	6.62	-	---	---	**240**	D	---	---	87.7	D	---	---	**165**	D	---	---	46.8	D
Butylbenzylphthalate	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Chrysene	mg/kg	---	---	0.331	-	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
Dibenzo(a,h)Anthracene	mg/kg	---	---	0.291	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
Dibenzofuran	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Diethylphthalate	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U

Laboratory Sample Designation		1709502-01		1709502-02		1709502-03		1709502-04		1709502-05		1709502-06		1709502-07		1709502-08		1709502-09		1709502-10	
Sample Designation		SED-G-1 (1_2-1_5')		SED-C-3 (0-2_0')		SED-G-3 (1_2-1_6')		SED-C-80 (0-2_0')		SED-G-80 (0_8-1_2')		SED-C-44 (0-0_7')		SED-G-44 (5_6-7_0')		SED-C-45 (0-7_9')		SED-G-45 (6_32-7_9')		SED-C-47 (0-8_1')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Dimethylphthalate	mg/kg	---	---	0.58	U	---	---	**0.822**	U	---	---	**0.873**	U	---	---	**0.861**	U	---	---	**0.978**	U
Di-n-butylphthalate	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Di-n-octylphthalate	mg/kg	---	---	0.58	U	---	---	49.7	D	---	---	8.60	-	---	---	9.13	-	---	---	3.06	-
Fluoranthene	mg/kg	---	---	0.595	-	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Fluorene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Hexachlorobenzene	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
Hexachlorobutadiene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Hexachloroethane	mg/kg	---	---	0.58	U	---	---	0.412	U	---	---	0.438	U	---	---	0.432	U	---	---	0.491	U
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Isophorone	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Naphthalene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Nitrobenzene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
N-Nitrosodimethylamine	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Pentachlorophenol	mg/kg	---	---	2.91	U	---	---	1.65	U	---	---	1.75	U	---	---	1.73	U	---	---	1.96	U
Phenanthrene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Phenol	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Pyrene	mg/kg	---	---	0.58	U	---	---	0.822	U	---	---	0.873	U	---	---	0.861	U	---	---	0.978	U
Pyridine	mg/kg	---	---	2.91	U	---	---	4.12	U	---	---	4.38	U	---	---	4.32	U	---	---	4.91	U
Total Metals																					
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																					
4,4´-DDD	mg/kg	---	---	0.0042	U	---	---	0.0279	-	---	---	0.0067	U	---	---	0.0110	LC, P	---	---	0.0072	U
4,4´-DDE	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0317	-
4,4´-DDT	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Aldrin	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
alpha-BHC	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
alpha-Chlordane	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
beta-BHC	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Chlordane (Total)	mg/kg	---	---	0.0338	U	---	---	0.0506	U	---	---	0.0532	U	---	---	0.0525	U	---	---	0.0578	U
delta-BHC	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Dieldrin	mg/kg	---	---	0.0042	U	---	---	0.0118	LC, P	---	---	0.0067	U	---	---	0.0131	LC, P	---	---	0.0072	U
Endosulfan I	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Endosulfan II	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Endosulfan Sulfate	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Endrin	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Endrin Ketone	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
gamma-BHC (Lindane)	mg/kg	---	---	0.0025	U	---	---	**0.0038**	U	---	---	**0.004**	U	---	---	**0.0039**	U	---	---	**0.0043**	U
gamma-Chlordane	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U

Laboratory Sample Designation		1709502-01		1709502-02		1709502-03		1709502-04		1709502-05		1709502-06		1709502-07		1709502-08		1709502-09		1709502-10	
Sample Designation		SED-G-1 (1_2-1_5')		SED-C-3 (0-2_0')		SED-G-3 (1_2-1_6')		SED-C-80 (0-2_0')		SED-G-80 (0_8-1_2')		SED-C-44 (0-0_7')		SED-G-44 (5_6-7_0')		SED-C-45 (0-7_9')		SED-G-45 (6_32-7_9')		SED-C-47 (0-8_1')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Heptachlor	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Heptachlor Epoxide	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Hexachlorobenzene	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Methoxychlor	mg/kg	---	---	0.0042	U	---	---	0.0063	U	---	---	0.0067	U	---	---	0.0066	U	---	---	0.0072	U
Toxaphene	mg/kg	---	---	0.212	U	---	---	0.316	U	---	---	0.333	U	---	---	0.328	U	---	---	0.361	U
PCBs																					
Aroclor 1016	mg/kg	---	---	0.09	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1221	mg/kg	---	---	0.09	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1232	mg/kg	---	---	0.09	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1242	mg/kg	---	---	0.3	-	---	---	0.9	-	---	---	1.0	-	---	---	**1.2**	-	---	---	**1.3**	-
Aroclor 1248	mg/kg	---	---	0.09	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1254	mg/kg	---	---	0.8	-	---	---	**2.2**	-	---	---	**2.4**	-	---	---	**2.6**	-	---	---	**3.1**	D
Aroclor 1260	mg/kg	---	---	0.3	-	---	---	0.4	-	---	---	0.9	-	---	---	**1.1**	-	---	---	**1.2**	-
Aroclor 1262	mg/kg	---	---	0.09	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Aroclor 1268	mg/kg	---	---	0.09	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Herbicides																					
2,4,5-T	mg/kg	---	---	0.032	U	---	---	0.239	U, D	---	---	0.052	U	---	---	0.048	U	---	---	0.05	U
2,4,5-TP (Silvex)	mg/kg	---	---	0.032	U	---	---	0.239	U, D	---	---	0.108	LC, P	---	---	0.181	LC, P	---	---	0.327	-
2,4-D	mg/kg	---	---	0.161	U	---	---	1.18	U, D	---	---	0.256	U	---	---	0.239	U	---	---	0.245	U
2,4-DB	mg/kg	---	---	0.162	U	---	---	1.2	U, D	---	---	0.259	U	---	---	0.241	U	---	---	0.248	U
Dalapon	mg/kg	---	---	0.156	U	---	---	1.14	U, D	---	---	0.248	U	---	---	0.231	U	---	---	0.238	U
Dicamba	mg/kg	---	---	0.032	U	---	---	0.312	LC, P, D	---	---	0.371	LC, P	---	---	0.563	LC, P, D	---	---	0.293	LC, P
Dichlorprop	mg/kg	---	---	0.161	U	---	---	1.18	U, D	---	---	0.459	LC, P	---	---	0.678	LC, P	---	---	1.07	LC, P
Dinoseb	mg/kg	---	---	0.162	U	---	---	1.2	U, D	---	---	0.294	LC, P	---	---	0.266	LC, P	---	---	0.417	LC, P
MCPA	mg/kg	---	---	7.95	U	---	---	58.5	U, D	---	---	12.7	U	---	---	11.8	#	---	---	12.1	U
MCPP	mg/kg	---	---	8.03	#	---	---	59.1	#	---	---	12.8	#	---	---	11.9	#	---	---	12.3	#
Classical Chemistry																					
Corrosivity (pH)	S.U.	---	---	7.91	-	---	---	6.97	-	---	---	7.49	-	---	---	7.31	-	---	---	7.42	-
Flashpoint	°F	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>
Percent Moisture	%	---	---	43	-	---	---	61	-	---	---	64	-	---	---	63	-	---	---	66	-
Reactive Cyanide	mg/kg	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U
Reactive Sulfide	mg/kg	---	---	2	U	---	---	2.0	-	---	---	24.3	-	---	---	2.1	-	---	---	6.5	-
TCLP Metals																					
Arsenic	mg/L	---	---	0.249	-	---	---	0.127	-	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U
Barium	mg/L	---	---	0.112	-	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	0.056	-
Cadmium	mg/L	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U
Chromium	mg/L	---	---	0.02	U	---	---	0.021	-	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U
Lead	mg/L	---	---	0.215	-	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U
Mercury	mg/L	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U
Selenium	mg/L	---	---	0.15	U, D	---	---	0.25	U, D	---	---	0.3	U, D	---	---	0.5	U, D	---	---	0.25	U, D
Silver	mg/L	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U

Laboratory Sample Designation		1709502-11		1709502-12		1709502-13		1709502-14		1709502-15		1709502-16		1709502-17		1709502-17RE1		1709502-18	
Sample Designation		SED-G-47 (6_48-8_1')		SED-C-46 (0-8_0')		SED-G-46 (1_6-3_2')		SED-C-35 (0-8_6')		SED-G-35 (6_88-8_6')		SED-C-37 (0-7_9')		SED-G-37 (4_74-6_32')		SED-G-37 (4_74-6_32')		SED-C-36 (0-9_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
VOCs - Low																			
1,1,1,2-Tetrachloroethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,1,1-Trichloroethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,1,2,2-Tetrachloroethane	mg/kg	**0.0066**	U	---	---	**0.0067**	U	---	---	**0.0073**	U	---	---	0.0044	U	0.0046	U	---	---
1,1,2-Trichloroethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,1-Dichloroethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,1-Dichloroethene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,1-Dichloropropene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,2,3-Trichlorobenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,2,3-Trichloropropane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,2,4-Trichlorobenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,2,4-Trimethylbenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.415	-	---	---	0.011	U	0.0114	U	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,2-Dibromoethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,2-Dichlorobenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0696	-	---	---	0.0298	-	0.0725	-	---	---
1,2-Dichloroethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,2-Dichloropropane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,3,5-Trimethylbenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.227	-	---	---	0.011	U	0.0114	U	---	---
1,3-Dichlorobenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0603	-	---	---	0.011	U	0.0114	U	---	---
1,3-Dichloropropane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
1,4-Dichlorobenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	**1.62**	E	---	---	0.011	U	0.0114	U	---	---
1,4-Dioxane	mg/kg	**0.329**	U	---	---	**0.337**	U	---	---	**0.363**	U	---	---	**0.22**	U	**0.228**	U	---	---
2,2-Dichloropropane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
2-Butanone	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.0363	U	---	---	0.022	U	0.0228	U	---	---
2-Chlorotoluene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.304	-	---	---	0.011	U	0.0114	U	---	---
2-Hexanone	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.0363	U	---	---	0.022	U	0.0228	U	---	---
4-Chlorotoluene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0883	-	---	---	0.011	U	0.0114	U	---	---
4-Isopropyltoluene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
4-Methyl-2-Pentanone	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.0363	U	---	---	0.022	U	0.0228	U	---	---
Acetone	mg/kg	0.231	-	---	---	0.192	-	---	---	0.573	-	---	---	0.022	U	0.0228	U	---	---
Benzene	mg/kg	0.0168	-	---	---	0.0169	U	---	---	0.0479	-	---	---	0.011	U	0.0114	U	---	---
Bromobenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Bromochloromethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Bromodichloromethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Bromoform	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Bromomethane	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.0363	U	---	---	0.022	U	0.0228	U	---	---
Carbon Disulfide	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Carbon Tetrachloride	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Chlorobenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	**4.74**	E	---	---	0.0117	-	0.0114	U	---	---
Chloroethane	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.0363	U	---	---	0.022	U	0.0228	U	---	---
Chloroform	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Chloromethane	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.0363	U	---	---	0.022	U	0.0228	U	---	---
cis-1,2-Dichloroethene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
cis-1,3-Dichloropropene	mg/kg	**0.0165**	U	---	---	**0.0169**	U	---	---	**0.0182**	U	---	---	**0.011**	U	**0.0114**	U	---	---
Dibromochloromethane	mg/kg	**0.0066**	U	---	---	**0.0067**	U	---	---	**0.0073**	U	---	---	0.0044	U	0.0046	U	---	---
Dibromomethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Dichlorodifluoromethane	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.0363	U	---	---	0.022	U	0.0228	U	---	---

Laboratory Sample Designation		1709502-11		1709502-12		1709502-13		1709502-14		1709502-15		1709502-16		1709502-17		1709502-17RE1		1709502-18	
Sample Designation		SED-G-47 (6_48-8_1')		SED-C-46 (0-8_0')		SED-G-46 (1_6-3_2')		SED-C-35 (0-8_6')		SED-G-35 (6_88-8_6')		SED-C-37 (0-7_9')		SED-G-37 (4_74-6_32')		SED-G-37 (4_74-6_32')		SED-C-36 (0-9_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Diethyl Ether	mg/kg	0.0383	-	---	---	0.0169	U	---	---	0.0182	U	---	---	0.0189	-	0.0165	-	---	---
Di-isopropyl ether	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Ethyl tertiary-butyl ether	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Ethylbenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.111	-	---	---	0.011	U	0.0114	U	---	---
Hexachlorobutadiene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Isopropylbenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0334	-	---	---	0.011	U	0.0114	U	---	---
Methyl tert-Butyl Ether	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Methylene Chloride	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.0363	U	---	---	0.022	U	0.0228	U	---	---
Naphthalene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.651	-	---	---	0.0149	-	0.0114	U	---	---
n-Butylbenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.127	-	---	---	0.011	U	0.0114	U	---	---
n-Propylbenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0513	-	---	---	0.011	U	0.0114	U	---	---
sec-Butylbenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0541	-	---	---	0.011	U	0.0114	U	---	---
Styrene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
tert-Butylbenzene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Tertiary-amyl methyl ether	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Tetrachloroethene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Tetrahydrofuran	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Toluene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.102	-	---	---	0.011	U	0.0114	U	---	---
trans-1,2-Dichloroethene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
trans-1,3-Dichloropropene	mg/kg	**0.0165**	U	---	---	**0.0169**	U	---	---	**0.0182**	U	---	---	**0.011**	U	**0.0114**	U	---	---
Trichloroethene	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Trichlorofluoromethane	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0182	U	---	---	0.011	U	0.0114	U	---	---
Vinyl Chloride	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.0363	U	---	---	0.022	U	0.0228	U	---	---
Xylene O	mg/kg	0.0165	U	---	---	0.0169	U	---	---	0.0887	-	---	---	0.011	U	0.0114	U	---	---
Xylene P,M	mg/kg	0.0329	U	---	---	0.0337	U	---	---	0.172	-	---	---	0.022	U	0.0228	U	---	---
VOCs																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	2.18	-	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	6.48	U	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	**10.0**	-	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-11		1709502-12		1709502-13		1709502-14		1709502-15		1709502-16		1709502-17		1709502-17RE1		1709502-18	
Sample Designation		SED-G-47 (6_48-8_1')		SED-C-46 (0-8_0')		SED-G-46 (1_6-3_2')		SED-C-35 (0-8_6')		SED-G-35 (6_88-8_6')		SED-C-37 (0-7_9')		SED-G-37 (4_74-6_32')		SED-G-37 (4_74-6_32')		SED-C-36 (0-9_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	**259**	U	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	**6.48**	U	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	6.48	U	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	**6.48**	U	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	**6.48**	U	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	**39.7**	-	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	**2.59**	U	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	**7.26**	-	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	6.48	U	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-11		1709502-12		1709502-13		1709502-14		1709502-15		1709502-16		1709502-17		1709502-17RE1		1709502-18	
Sample Designation		SED-G-47 (6_48-8_1')		SED-C-46 (0-8_0')		SED-G-46 (1_6-3_2')		SED-C-35 (0-8_6')		SED-G-35 (6_88-8_6')		SED-C-37 (0-7_9')		SED-G-37 (4_74-6_32')		SED-G-37 (4_74-6_32')		SED-C-36 (0-9_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	**1.3**	U	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	1.3	U	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	2.59	U	---	---	---	---	---	---	---	---
SVOCs																			
1,2,4-Trichlorobenzene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
1,2-Dichlorobenzene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	1.18	-	---	---	---	---	0.961	U
1,3-Dichlorobenzene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
1,4-Dichlorobenzene	mg/kg	---	---	0.434	U	---	---	**0.876**	-	---	---	0.485	U	---	---	---	---	0.482	U
2,4,5-Trichlorophenol	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
2,4,6-Trichlorophenol	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
2,4-Dichlorophenol	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
2,4-Dimethylphenol	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
2,4-Dinitrophenol	mg/kg	---	---	1.73	U	---	---	1.88	U	---	---	1.94	U	---	---	---	---	1.92	U
2,4-Dinitrotoluene	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
2,6-Dinitrotoluene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
2-Chloronaphthalene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
2-Chlorophenol	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
2-Methylnaphthalene	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
2-Methylphenol	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
2-Nitrophenol	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
3,3´-Dichlorobenzidine	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.485	U	---	---	---	---	0.482	U
3+4-Methylphenol	mg/kg	---	---	1.73	U	---	---	1.88	U	---	---	1.94	U	---	---	---	---	1.92	U
4-Bromophenyl-phenylether	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
4-Chloroaniline	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.485	U	---	---	---	---	0.482	U
4-Nitrophenol	mg/kg	---	---	4.34	U	---	---	4.7	U	---	---	4.85	U	---	---	---	---	4.82	U
Acenaphthene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Acenaphthylene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Acetophenone	mg/kg	---	---	1.73	U	---	---	1.88	U	---	---	1.94	U	---	---	---	---	1.92	U
Aniline	mg/kg	---	---	4.34	U	---	---	4.7	U	---	---	4.85	U	---	---	---	---	4.82	U
Anthracene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Azobenzene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Benzo(a)anthracene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Benzo(a)pyrene	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.617	-
Benzo(b)fluoranthene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Benzo(g,h,i)perylene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Benzo(k)fluoranthene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
bis(2-Chloroethoxy)methane	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
bis(2-Chloroethyl)ether	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
bis(2-chloroisopropyl)Ether	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	**118**	D	---	---	**216**	D	---	---	**182**	D	---	---	---	---	**472**	D
Butylbenzylphthalate	mg/kg	---	---	0.864	U	---	---	1.25	-	---	---	1.49	-	---	---	---	---	0.961	U
Chrysene	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.736	-
Dibenzo(a,h)Anthracene	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
Dibenzofuran	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Diethylphthalate	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U

Laboratory Sample Designation		1709502-11		1709502-12		1709502-13		1709502-14		1709502-15		1709502-16		1709502-17		1709502-17RE1		1709502-18	
Sample Designation		SED-G-47 (6_48-8_1')		SED-C-46 (0-8_0')		SED-G-46 (1_6-3_2')		SED-C-35 (0-8_6')		SED-G-35 (6_88-8_6')		SED-C-37 (0-7_9')		SED-G-37 (4_74-6_32')		SED-G-37 (4_74-6_32')		SED-C-36 (0-9_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Dimethylphthalate	mg/kg	---	---	**0.864**	U	---	---	**0.937**	U	---	---	**0.968**	U	---	---	---	---	**0.961**	U
Di-n-butylphthalate	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Di-n-octylphthalate	mg/kg	---	---	0.864	U	---	---	11.3	-	---	---	9.01	-	---	---	---	---	5.90	-
Fluoranthene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	1.38	-
Fluorene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Hexachlorobenzene	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
Hexachlorobutadiene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Hexachloroethane	mg/kg	---	---	0.434	U	---	---	0.47	U	---	---	0.485	U	---	---	---	---	0.482	U
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Isophorone	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Naphthalene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Nitrobenzene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
N-Nitrosodimethylamine	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Pentachlorophenol	mg/kg	---	---	1.73	U	---	---	1.88	U	---	---	1.94	U	---	---	---	---	1.92	U
Phenanthrene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Phenol	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	0.961	U
Pyrene	mg/kg	---	---	0.864	U	---	---	0.937	U	---	---	0.968	U	---	---	---	---	1.29	-
Pyridine	mg/kg	---	---	4.34	U	---	---	4.7	U	---	---	4.85	U	---	---	---	---	4.82	U
Total Metals																			
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																			
4,4´-DDD	mg/kg	---	---	0.0097	-	---	---	0.0443	-	---	---	0.0075	U	---	---	---	---	0.0366	-
4,4´-DDE	mg/kg	---	---	0.0319	LC, P	---	---	0.0164	LC, P	---	---	0.0075	U	---	---	---	---	0.0155	LC, P
4,4´-DDT	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Aldrin	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
alpha-BHC	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
alpha-Chlordane	mg/kg	---	---	0.0081	-	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
beta-BHC	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Chlordane (Total)	mg/kg	---	---	0.0547	U	---	---	0.0559	U	---	---	0.06	U	---	---	---	---	0.0592	U
delta-BHC	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Dieldrin	mg/kg	---	---	0.0118	LC, P	---	---	0.0238	LC, P	---	---	0.0107	-	---	---	---	---	0.0179	LC, P
Endosulfan I	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Endosulfan II	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Endosulfan Sulfate	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Endrin	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Endrin Ketone	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
gamma-BHC (Lindane)	mg/kg	---	---	**0.0041**	U	---	---	**0.0042**	U	---	---	**0.0045**	U	---	---	---	---	**0.0044**	U
gamma-Chlordane	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U

Laboratory Sample Designation		1709502-11		1709502-12		1709502-13		1709502-14		1709502-15		1709502-16		1709502-17		1709502-17RE1		1709502-18	
Sample Designation		SED-G-47 (6_48-8_1')		SED-C-46 (0-8_0')		SED-G-46 (1_6-3_2')		SED-C-35 (0-8_6')		SED-G-35 (6_88-8_6')		SED-C-37 (0-7_9')		SED-G-37 (4_74-6_32')		SED-G-37 (4_74-6_32')		SED-C-36 (0-9_5')	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Heptachlor	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Heptachlor Epoxide	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Hexachlorobenzene	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Methoxychlor	mg/kg	---	---	0.0068	U	---	---	0.007	U	---	---	0.0075	U	---	---	---	---	0.0074	U
Toxaphene	mg/kg	---	---	0.342	U	---	---	0.35	U	---	---	0.375	U	---	---	---	---	0.37	U
PCBs																			
Aroclor 1016	mg/kg	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	0.1	U
Aroclor 1221	mg/kg	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	0.1	U
Aroclor 1232	mg/kg	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	0.1	U
Aroclor 1242	mg/kg	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	0.1	U
Aroclor 1248	mg/kg	---	---	0.8	-	---	---	**3.3**	D	---	---	**1.7**	-	---	---	---	---	**2.2**	-
Aroclor 1254	mg/kg	---	---	0.6	-	---	---	**2.2**	-	---	---	0.9	-	---	---	---	---	**1.6**	-
Aroclor 1260	mg/kg	---	---	0.2	-	---	---	0.8	-	---	---	0.3	-	---	---	---	---	0.4	-
Aroclor 1262	mg/kg	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	0.1	U
Aroclor 1268	mg/kg	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	0.1	U
Herbicides																			
2,4,5-T	mg/kg	---	---	0.045	U	---	---	0.051	U	---	---	0.058	U	---	---	---	---	0.265	U, D
2,4,5-TP (Silvex)	mg/kg	---	---	0.116	LC, P	---	---	0.061	LC, P	---	---	0.116	LC, P	---	---	---	---	0.265	U, D
2,4-D	mg/kg	---	---	0.222	U	---	---	0.253	U	---	---	0.288	U	---	---	---	---	1.31	U, D
2,4-DB	mg/kg	---	---	0.224	U	---	---	0.256	U	---	---	0.291	U	---	---	---	---	1.33	U, D
Dalapon	mg/kg	---	---	0.215	U	---	---	0.245	U	---	---	0.279	U	---	---	---	---	1.27	U, D
Dicamba	mg/kg	---	---	0.248	LC, P	---	---	0.146	P, LC	---	---	0.115	LC, P	---	---	---	---	0.263	U, D
Dichlorprop	mg/kg	---	---	0.340	LC, P	---	---	0.253	U	---	---	0.288	U	---	---	---	---	1.31	U, D
Dinoseb	mg/kg	---	---	0.224	U	---	---	0.256	U	---	---	0.291	U	---	---	---	---	1.33	U, D
MCPA	mg/kg	---	---	11	U	---	---	12.5	U	---	---	14.2	U	---	---	---	---	65	U, D
MCPP	mg/kg	---	---	11.1	#	---	---	12.6	#	---	---	14.4	#	---	---	---	---	65.7	#
Classical Chemistry																			
Corrosivity (pH)	S.U.	---	---	7.70	-	---	---	7.08	-	---	---	7.07	-	---	---	---	---	7.63	-
Flashpoint	°F	---	---	200	>	---	---	200	>	---	---	200	>	---	---	---	---	200	>
Percent Moisture	%	---	---	63	-	---	---	65	-	---	---	67	-	---	---	---	---	66	-
Reactive Cyanide	mg/kg	---	---	2	U	---	---	2	U	---	---	2	U	---	---	---	---	2	U
Reactive Sulfide	mg/kg	---	---	7.0	-	---	---	18.8	-	---	---	2	U	---	---	---	---	7.9	-
TCLP Metals																			
Arsenic	mg/L	---	---	0.05	U	---	---	0.05	U	---	---	0.115	-	---	---	---	---	0.05	U
Barium	mg/L	---	---	0.091	-	---	---	0.05	U	---	---	0.05	U	---	---	---	---	0.05	U
Cadmium	mg/L	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	---	---	0.01	U
Chromium	mg/L	---	---	0.02	U	---	---	0.026	-	---	---	0.027	-	---	---	---	---	0.023	-
Lead	mg/L	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	---	---	0.05	U
Mercury	mg/L	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	---	---	0.0005	U
Selenium	mg/L	---	---	0.1	U	---	---	0.25	U, D	---	---	0.25	U, D	---	---	---	---	0.25	U, D
Silver	mg/L	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	---	---	0.01	U

Laboratory Sample Designation		1709502-19		1709502-20		1709502-21		1709502-22		1709502-23		1709502-24		1709502-25		1709502-26	
Sample Designation		SED-G-36 (5_7-7_6')		SED-C-3 (0-2_0') - Dried		SED-C-80 (0-2_0') - Dried		SED-C-44 (0-0_7') - Dried		SED-C-45 (0-7_9') - Dried		SED-C-47 (0-8_1') - Dried		SED-C-46 (0-8_0') - Dried		SED-C-35 (0-8_6') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
VOCs - Low																	
1,1,1,2-Tetrachloroethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	**0.0073**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	**0.364**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	0.0498	-	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	**0.0182**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	**0.0073**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-19		1709502-20		1709502-21		1709502-22		1709502-23		1709502-24		1709502-25		1709502-26	
Sample Designation		SED-G-36 (5_7-7_6')		SED-C-3 (0-2_0') - Dried		SED-C-80 (0-2_0') - Dried		SED-C-44 (0-0_7') - Dried		SED-C-45 (0-7_9') - Dried		SED-C-47 (0-8_1') - Dried		SED-C-46 (0-8_0') - Dried		SED-C-35 (0-8_6') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Diethyl Ether	mg/kg	0.0271	-	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	**0.0182**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	0.0182	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	0.0364	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VOCs																	
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-19		1709502-20		1709502-21		1709502-22		1709502-23		1709502-24		1709502-25		1709502-26	
Sample Designation		SED-G-36 (5_7-7_6')		SED-C-3 (0-2_0') - Dried		SED-C-80 (0-2_0') - Dried		SED-C-44 (0-0_7') - Dried		SED-C-45 (0-7_9') - Dried		SED-C-47 (0-8_1') - Dried		SED-C-46 (0-8_0') - Dried		SED-C-35 (0-8_6') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-19		1709502-20		1709502-21		1709502-22		1709502-23		1709502-24		1709502-25		1709502-26	
Sample Designation		SED-G-36 (5_7-7_6')		SED-C-3 (0-2_0') - Dried		SED-C-80 (0-2_0') - Dried		SED-C-44 (0-0_7') - Dried		SED-C-45 (0-7_9') - Dried		SED-C-47 (0-8_1') - Dried		SED-C-46 (0-8_0') - Dried		SED-C-35 (0-8_6') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																	
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-19		1709502-20		1709502-21		1709502-22		1709502-23		1709502-24		1709502-25		1709502-26	
Sample Designation		SED-G-36 (5_7-7_6')		SED-C-3 (0-2_0') - Dried		SED-C-80 (0-2_0') - Dried		SED-C-44 (0-0_7') - Dried		SED-C-45 (0-7_9') - Dried		SED-C-47 (0-8_1') - Dried		SED-C-46 (0-8_0') - Dried		SED-C-35 (0-8_6') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Dimethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Metals																	
Arsenic	mg/kg	---	---	**106**	-	**121**	-	**119**	-	**137**	-	**127**	-	**105**	-	**90.1**	-
Barium	mg/kg	---	---	59.1	-	35.6	-	75.8	-	74.9	-	67.1	-	72.1	-	105	-
Cadmium	mg/kg	---	---	1.12	-	0.51	-	1.75	-	2.37	-	2.17	-	2.08	-	1.22	-
Chromium	mg/kg	---	---	78.1	-	**101**	-	99.3	-	**118**	-	99.2	-	97.5	-	**101**	-
Lead	mg/kg	---	---	**418**	-	163	-	**416**	-	**507**	-	**452**	-	**387**	-	**358**	-
Mercury	mg/kg	---	---	1.55	D	1.01	D	2.83	D	3.29	D	2.41	D	1.18	D	3.07	D
Selenium	mg/kg	---	---	46.9	EL, U, D	35.8	EL, U, D	42.2	EL, U, D	44.2	EL, U, D	44.8	EL, U, D	48.1	EL, U, D	46.5	EL, U, D
Silver	mg/kg	---	---	1.17	-	1.28	-	1.92	-	2.37	-	1.85	-	2.22	-	3.40	-
Pesticides																	
4,4´-DDD	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-19		1709502-20		1709502-21		1709502-22		1709502-23		1709502-24		1709502-25		1709502-26	
Sample Designation		SED-G-36 (5_7-7_6')		SED-C-3 (0-2_0') - Dried		SED-C-80 (0-2_0') - Dried		SED-C-44 (0-0_7') - Dried		SED-C-45 (0-7_9') - Dried		SED-C-47 (0-8_1') - Dried		SED-C-46 (0-8_0') - Dried		SED-C-35 (0-8_6') - Dried	
Sample Date		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017		09/18/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Heptachlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PCBs																	
Aroclor 1016	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Herbicides																	
2,4,5-T	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Classical Chemistry																	
Corrosivity (pH)	S.U.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TCLP Metals																	
Arsenic	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709502-27		1709502-28	
Sample Designation		SED-C-37 (0-7_9') - Dried		SED-C-36 (0-9_5') - Dried	
Sample Date		09/18/2017		09/18/2017	
Sample Depth					
Soil Type					
Group Designation					
VOCs - Low					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---
1,4-Dioxane	mg/kg	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---
2-Butanone	mg/kg	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---
Acetone	mg/kg	---	---	---	---
Benzene	mg/kg	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---
Bromoform	mg/kg	---	---	---	---
Bromomethane	mg/kg	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---
Chloroethane	mg/kg	---	---	---	---
Chloroform	mg/kg	---	---	---	---
Chloromethane	mg/kg	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---

Laboratory Sample Designation		1709502-27		1709502-28	
Sample Designation		SED-C-37 (0-7_9') - Dried		SED-C-36 (0-9_5') - Dried	
Sample Date		09/18/2017		09/18/2017	
Sample Depth					
Soil Type					
Group Designation					
Diethyl Ether	mg/kg	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---
Naphthalene	mg/kg	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---
Styrene	mg/kg	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---
Toluene	mg/kg	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---
Xylene O	mg/kg	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---
VOCs					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---

Laboratory Sample Designation		1709502-27		1709502-28	
Sample Designation		SED-C-37 (0-7_9') - Dried		SED-C-36 (0-9_5') - Dried	
Sample Date		09/18/2017		09/18/2017	
Sample Depth					
Soil Type					
Group Designation					
1,4-Dioxane - Screen	mg/kg	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---
2-Butanone	mg/kg	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---
Acetone	mg/kg	---	---	---	---
Benzene	mg/kg	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---
Bromoform	mg/kg	---	---	---	---
Bromomethane	mg/kg	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---
Chloroethane	mg/kg	---	---	---	---
Chloroform	mg/kg	---	---	---	---
Chloromethane	mg/kg	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---
Naphthalene	mg/kg	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---
Styrene	mg/kg	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---
Toluene	mg/kg	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---

Laboratory Sample Designation		1709502-27		1709502-28	
Sample Designation		SED-C-37 (0-7_9') - Dried		SED-C-36 (0-9_5') - Dried	
Sample Date		09/18/2017		09/18/2017	
Sample Depth					
Soil Type					
Group Designation					
Trichlorofluoromethane	mg/kg	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---
Xylene O	mg/kg	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---
SVOCs					
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---
2-Chlorophenol	mg/kg	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---	---
2-Methylphenol	mg/kg	---	---	---	---
2-Nitrophenol	mg/kg	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---
Acetophenone	mg/kg	---	---	---	---
Aniline	mg/kg	---	---	---	---
Anthracene	mg/kg	---	---	---	---
Azobenzene	mg/kg	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---
Butylbenzylphthalate	mg/kg	---	---	---	---
Chrysene	mg/kg	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---

Laboratory Sample Designation		1709502-27		1709502-28	
Sample Designation		SED-C-37 (0-7_9') - Dried		SED-C-36 (0-9_5') - Dried	
Sample Date		09/18/2017		09/18/2017	
Sample Depth					
Soil Type					
Group Designation					
Dimethylphthalate	mg/kg	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---
Fluorene	mg/kg	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---
Isophorone	mg/kg	---	---	---	---
Naphthalene	mg/kg	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---
Phenol	mg/kg	---	---	---	---
Pyrene	mg/kg	---	---	---	---
Pyridine	mg/kg	---	---	---	---
Total Metals					
Arsenic	mg/kg	**116**	-	**113**	-
Barium	mg/kg	103	-	83.8	-
Cadmium	mg/kg	1.81	-	1.87	-
Chromium	mg/kg	**105**	-	100	-
Lead	mg/kg	**398**	-	**469**	-
Mercury	mg/kg	5.48	D	2.59	D
Selenium	mg/kg	46.7	EL, U, D	46.2	EL, U, D
Silver	mg/kg	3.83	-	3.40	-
Pesticides					
4,4´-DDD	mg/kg	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---
Aldrin	mg/kg	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---
alpha-Chlordane	mg/kg	---	---	---	---
beta-BHC	mg/kg	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---
delta-BHC	mg/kg	---	---	---	---
Dieldrin	mg/kg	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---
Endosulfan II	mg/kg	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---
Endrin	mg/kg	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---

Laboratory Sample Designation		1709502-27		1709502-28	
Sample Designation		SED-C-37 (0-7_9') - Dried		SED-C-36 (0-9_5') - Dried	
Sample Date		09/18/2017		09/18/2017	
Sample Depth					
Soil Type					
Group Designation					
Heptachlor	mg/kg	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---
Toxaphene	mg/kg	---	---	---	---
PCBs					
Aroclor 1016	mg/kg	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---
Aroclor 1254	mg/kg	---	---	---	---
Aroclor 1260	mg/kg	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---
Herbicides					
2,4,5-T	mg/kg	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---
2,4-D	mg/kg	---	---	---	---
2,4-DB	mg/kg	---	---	---	---
Dalapon	mg/kg	---	---	---	---
Dicamba	mg/kg	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---
Dinoseb	mg/kg	---	---	---	---
MCPA	mg/kg	---	---	---	---
MCPP	mg/kg	---	---	---	---
Classical Chemistry					
Corrosivity (pH)	S.U.	---	---	---	---
Flashpoint	°F	---	---	---	---
Percent Moisture	%	---	---	---	---
Reactive Cyanide	mg/kg	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---
TCLP Metals					
Arsenic	mg/L	---	---	---	---
Barium	mg/L	---	---	---	---
Cadmium	mg/L	---	---	---	---
Chromium	mg/L	---	---	---	---
Lead	mg/L	---	---	---	---
Mercury	mg/L	---	---	---	---
Selenium	mg/L	---	---	---	---
Silver	mg/L	---	---	---	---

Laboratory Sample Designation		1709556-01		1709556-02		1709556-03		1709556-04		1709556-05		1709556-06		1709556-07		1709556-08		1709556-09	
Sample Designation		SED-G-66 (6_18-8_24')		SED-C-69 (0-3_5')		SED-G-69 (2_1-2_8')		SED-C-68 (0-3_1')		SED-G-68 (3_1-4_16')		SED-C-77 (0-6_4')		SED-G-77 (3_84-5_12')		SED-C-76 (0-7_7')		SED-G-76 (3_08-4_62')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
VOCs - Low																			
1,1,1,2-Tetrachloroethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0062	-	---	---	0.0186	U	---	---	0.0247	U
1,1,1-Trichloroethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,1,2,2-Tetrachloroethane	mg/kg	0.0047	U	---	---	0.0023	U	---	---	0.0017	U	---	---	**0.0074**	U	---	---	**0.0099**	U
1,1,2-Trichloroethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,1-Dichloroethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,1-Dichloroethene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,1-Dichloropropene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,2,3-Trichlorobenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,2,3-Trichloropropane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,2,4-Trichlorobenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,2,4-Trimethylbenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,2-Dibromoethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,2-Dichlorobenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,2-Dichloroethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,2-Dichloropropane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,3,5-Trimethylbenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,3-Dichlorobenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,3-Dichloropropane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,4-Dichlorobenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
1,4-Dioxane	mg/kg	**0.233**	U	---	---	0.115	U	---	---	0.0827	U	---	---	**0.371**	U	---	---	**0.494**	U
2,2-Dichloropropane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
2-Butanone	mg/kg	0.0233	U	---	---	0.0260	-	---	---	0.0083	U	---	---	0.0635	-	---	---	0.146	-
2-Chlorotoluene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.345	-	---	---	0.0247	U
2-Hexanone	mg/kg	0.0233	U	---	---	0.0115	U	---	---	0.0083	U	---	---	0.0371	U	---	---	0.0494	U
4-Chlorotoluene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0368	-	---	---	0.0247	U
4-Isopropyltoluene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0084	-	---	---	0.0186	U	---	---	0.0247	U
4-Methyl-2-Pentanone	mg/kg	0.0233	U	---	---	0.0115	U	---	---	0.0083	U	---	---	0.0371	U	---	---	0.0494	U
Acetone	mg/kg	0.168	-	---	---	0.182	-	---	---	0.0517	-	---	---	0.423	-	---	---	1.14	-
Benzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Bromobenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Bromochloromethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Bromodichloromethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Bromoform	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Bromomethane	mg/kg	0.0233	U	---	---	0.0115	U	---	---	0.0083	U	---	---	0.0371	U	---	---	0.0494	U
Carbon Disulfide	mg/kg	0.0248	-	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Carbon Tetrachloride	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Chlorobenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Chloroethane	mg/kg	0.0233	U	---	---	0.0115	U	---	---	0.0083	U	---	---	0.0371	U	---	---	0.0494	U
Chloroform	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Chloromethane	mg/kg	0.0233	U	---	---	0.0115	U	---	---	0.0083	U	---	---	0.0371	U	---	---	0.0494	U
cis-1,2-Dichloroethene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
cis-1,3-Dichloropropene	mg/kg	**0.0117**	U	---	---	0.0057	U	---	---	0.0041	U	---	---	**0.0186**	U	---	---	**0.0247**	U
Dibromochloromethane	mg/kg	0.0047	U	---	---	0.0023	U	---	---	0.0017	U	---	---	**0.0074**	U	---	---	**0.0099**	U
Dibromomethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Dichlorodifluoromethane	mg/kg	0.0233	U	---	---	0.0115	U	---	---	0.0083	U	---	---	0.0371	U	---	---	0.0494	U

Laboratory Sample Designation		1709556-01		1709556-02		1709556-03		1709556-04		1709556-05		1709556-06		1709556-07		1709556-08		1709556-09	
Sample Designation		SED-G-66 (6_18-8_24')		SED-C-69 (0-3_5')		SED-G-69 (2_1-2_8')		SED-C-68 (0-3_1')		SED-G-68 (3_1-4_16')		SED-C-77 (0-6_4')		SED-G-77 (3_84-5_12')		SED-C-76 (0-7_7')		SED-G-76 (3_08-4_62')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Diethyl Ether	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Di-isopropyl ether	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Ethyl tertiary-butyl ether	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Ethylbenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Hexachlorobutadiene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Isopropylbenzene	mg/kg	0.0117	U	---	---	0.0072	-	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Methyl tert-Butyl Ether	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Methylene Chloride	mg/kg	0.0233	U	---	---	0.0115	U	---	---	0.0083	U	---	---	0.0371	U	---	---	0.0494	U
Naphthalene	mg/kg	0.0117	U	---	---	0.0119	-	---	---	0.0046	-	---	---	0.0186	U	---	---	0.0247	U
n-Butylbenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
n-Propylbenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
sec-Butylbenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Styrene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
tert-Butylbenzene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Tertiary-amyl methyl ether	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Tetrachloroethene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Tetrahydrofuran	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Toluene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
trans-1,2-Dichloroethene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
trans-1,3-Dichloropropene	mg/kg	**0.0117**	U	---	---	0.0057	U	---	---	0.0041	U	---	---	**0.0186**	U	---	---	**0.0247**	U
Trichloroethene	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Trichlorofluoromethane	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Vinyl Chloride	mg/kg	0.0233	U	---	---	0.0115	U	---	---	0.0083	U	---	---	0.0371	U	---	---	0.0494	U
Xylene O	mg/kg	0.0117	U	---	---	0.0057	U	---	---	0.0041	U	---	---	0.0186	U	---	---	0.0247	U
Xylene P,M	mg/kg	0.0233	U	---	---	0.0115	U	---	---	0.0083	U	---	---	0.0371	U	---	---	0.0494	U
VOCs																			
1,1,1,2-Tetrachloroethane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	3.96	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709556-01		1709556-02		1709556-03		1709556-04		1709556-05		1709556-06		1709556-07		1709556-08		1709556-09	
Sample Designation		SED-G-66 (6_18-8_24')		SED-C-69 (0-3_5')		SED-G-69 (2_1-2_8')		SED-C-68 (0-3_1')		SED-G-68 (3_1-4_16')		SED-C-77 (0-6_4')		SED-G-77 (3_84-5_12')		SED-C-76 (0-7_7')		SED-G-76 (3_08-4_62')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
1,4-Dioxane - Screen	mg/kg	**159**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	3.96	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	3.96	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	**3.96**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	3.96	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	**1.59**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	3.96	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709556-01		1709556-02		1709556-03		1709556-04		1709556-05		1709556-06		1709556-07		1709556-08		1709556-09	
Sample Designation		SED-G-66 (6_18-8_24')		SED-C-69 (0-3_5')		SED-G-69 (2_1-2_8')		SED-C-68 (0-3_1')		SED-G-68 (3_1-4_16')		SED-C-77 (0-6_4')		SED-G-77 (3_84-5_12')		SED-C-76 (0-7_7')		SED-G-76 (3_08-4_62')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Trichlorofluoromethane	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	**0.793**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	0.793	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	1.59	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																			
1,2,4-Trichlorobenzene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
1,2-Dichlorobenzene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
1,3-Dichlorobenzene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	0.848	U	---	---
1,4-Dichlorobenzene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
2,4-Dichlorophenol	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
2,4-Dimethylphenol	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
2,4-Dinitrophenol	mg/kg	---	---	2.68	U	---	---	2.73	U	---	---	2.09	U	---	---	**4.25**	U	---	---
2,4-Dinitrotoluene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
2,6-Dinitrotoluene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
2-Chloronaphthalene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
2-Chlorophenol	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
2-Methylnaphthalene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
2-Methylphenol	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
2-Nitrophenol	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	0.268	U	---	---	0.273	U	---	---	0.524	U	---	---	1.7	U	---	---
3+4-Methylphenol	mg/kg	---	---	1.07	U	---	---	1.09	U	---	---	2.09	U	---	---	1.7	U	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
4-Chloroaniline	mg/kg	---	---	0.268	U	---	---	0.273	U	---	---	0.524	U	---	---	**1.7**	U	---	---
4-Nitrophenol	mg/kg	---	---	2.68	U	---	---	2.73	U	---	---	5.24	U	---	---	4.25	U	---	---
Acenaphthene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Acenaphthylene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	0.848	U	---	---
Acetophenone	mg/kg	---	---	1.07	U	---	---	1.09	U	---	---	2.09	U	---	---	1.7	U	---	---
Aniline	mg/kg	---	---	2.68	U	---	---	2.73	U	---	---	5.24	U	---	---	4.25	U	---	---
Anthracene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Azobenzene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Benzo(a)anthracene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Benzo(a)pyrene	mg/kg	---	---	0.268	U	---	---	0.273	U	---	---	0.524	U	---	---	0.425	U	---	---
Benzo(b)fluoranthene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Benzo(k)fluoranthene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	3.38	-	---	---	1.64	-	---	---	**586**	D	---	---	**193**	D	---	---
Butylbenzylphthalate	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Chrysene	mg/kg	---	---	0.268	U	---	---	0.273	U	---	---	0.524	U	---	---	0.425	U	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	0.268	U	---	---	0.273	U	---	---	0.524	U	---	---	0.425	U	---	---
Dibenzofuran	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Diethylphthalate	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---

Laboratory Sample Designation		1709556-01		1709556-02		1709556-03		1709556-04		1709556-05		1709556-06		1709556-07		1709556-08		1709556-09	
Sample Designation		SED-G-66 (6_18-8_24')		SED-C-69 (0-3_5')		SED-G-69 (2_1-2_8')		SED-C-68 (0-3_1')		SED-G-68 (3_1-4_16')		SED-C-77 (0-6_4')		SED-G-77 (3_84-5_12')		SED-C-76 (0-7_7')		SED-G-76 (3_08-4_62')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Dimethylphthalate	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	**1.04**	U	---	---	**0.848**	U	---	---
Di-n-butylphthalate	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Di-n-octylphthalate	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	10.3	-	---	---	28.8	D	---	---
Fluoranthene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Fluorene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Hexachlorobenzene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
Hexachlorobutadiene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Hexachloroethane	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	**0.848**	U	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Isophorone	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Naphthalene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Nitrobenzene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
N-Nitrosodimethylamine	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Pentachlorophenol	mg/kg	---	---	2.68	U	---	---	2.73	U	---	---	2.09	U	---	---	**4.25**	U	---	---
Phenanthrene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Phenol	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	0.524	U	---	---	0.848	U	---	---
Pyrene	mg/kg	---	---	0.534	U	---	---	0.544	U	---	---	1.04	U	---	---	0.848	U	---	---
Pyridine	mg/kg	---	---	2.68	U	---	---	2.73	U	---	---	5.24	U	---	---	4.25	U	---	---
Total Metals																			
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																			
4,4´-DDD	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0335	-	---	---	0.0115	-	---	---
4,4´-DDE	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0447	-	---	---	0.0199	-	---	---
4,4´-DDT	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Aldrin	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
alpha-BHC	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
alpha-Chlordane	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
beta-BHC	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Chlordane (Total)	mg/kg	---	---	0.0328	U	---	---	0.0322	U	---	---	0.0816	U	---	---	0.0513	U	---	---
delta-BHC	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Dieldrin	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0215	LC, P	---	---	0.0141	-	---	---
Endosulfan I	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Endosulfan II	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Endosulfan Sulfate	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Endrin	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Endrin Ketone	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
gamma-BHC (Lindane)	mg/kg	---	---	0.0025	U	---	---	0.0024	U	---	---	**0.0061**	U	---	---	**0.0038**	U	---	---
gamma-Chlordane	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---

Laboratory Sample Designation		1709556-01		1709556-02		1709556-03		1709556-04		1709556-05		1709556-06		1709556-07		1709556-08		1709556-09	
Sample Designation		SED-G-66 (6_18-8_24')		SED-C-69 (0-3_5')		SED-G-69 (2_1-2_8')		SED-C-68 (0-3_1')		SED-G-68 (3_1-4_16')		SED-C-77 (0-6_4')		SED-G-77 (3_84-5_12')		SED-C-76 (0-7_7')		SED-G-76 (3_08-4_62')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Heptachlor	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Heptachlor Epoxide	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Hexachlorobenzene	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Methoxychlor	mg/kg	---	---	0.0041	U	---	---	0.004	U	---	---	0.0102	U	---	---	0.0064	U	---	---
Toxaphene	mg/kg	---	---	0.205	U	---	---	0.201	U	---	---	0.51	U	---	---	0.321	U	---	---
PCBs																			
Aroclor 1016	mg/kg	---	---	0.08	U	---	---	0.08	U	---	---	0.2	U	---	---	0.1	U	---	---
Aroclor 1221	mg/kg	---	---	0.08	U	---	---	0.08	U	---	---	0.2	U	---	---	0.1	U	---	---
Aroclor 1232	mg/kg	---	---	0.08	U	---	---	0.08	U	---	---	0.2	U	---	---	0.1	U	---	---
Aroclor 1242	mg/kg	---	---	0.1	-	---	---	0.1	-	---	---	**1.5**	-	---	---	0.6	-	---	---
Aroclor 1248	mg/kg	---	---	0.08	U	---	---	0.08	U	---	---	0.2	U	---	---	0.1	U	---	---
Aroclor 1254	mg/kg	---	---	0.5	-	---	---	**1.2**	-	---	---	**2.7**	-	---	---	0.9	-	---	---
Aroclor 1260	mg/kg	---	---	0.1	-	---	---	0.1	-	---	---	0.7	-	---	---	0.2	-	---	---
Aroclor 1262	mg/kg	---	---	0.08	U	---	---	0.08	U	---	---	0.2	U	---	---	0.1	U	---	---
Aroclor 1268	mg/kg	---	---	0.08	U	---	---	0.08	U	---	---	0.2	U	---	---	0.1	U	---	---
Herbicides																			
2,4,5-T	mg/kg	---	---	0.032	U	---	---	0.202	LC, P	---	---	0.08	U	---	---	0.046	U	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	0.123	LC, P	---	---	0.028	U	---	---	0.163	-	---	---	0.160	LC, P	---	---
2,4-D	mg/kg	---	---	0.157	U	---	---	0.139	U	---	---	0.395	U	---	---	0.228	U	---	---
2,4-DB	mg/kg	---	---	0.158	U	---	---	0.14	U	---	---	0.399	U	---	---	0.23	U	---	---
Dalapon	mg/kg	---	---	0.152	U	---	---	0.135	U	---	---	0.383	U	---	---	0.22	U	---	---
Dicamba	mg/kg	---	---	0.206	LC, P	---	---	0.029	LC, P	---	---	0.838	LC, P, D	---	---	0.288	LC, P	---	---
Dichlorprop	mg/kg	---	---	0.253	LC, P	---	---	0.782	LC, P	---	---	0.395	U	---	---	0.228	U	---	---
Dinoseb	mg/kg	---	---	0.158	U	---	---	0.14	U	---	---	0.399	U	---	---	0.23	LC, P, U	---	---
MCPA	mg/kg	---	---	7.75	U	---	---	6.87	#	---	---	19.5	U	---	---	11.3	#	---	---
MCPP	mg/kg	---	---	7.83	#	---	---	6.95	#	---	---	19.8	#	---	---	11.4	#	---	---
Classical Chemistry																			
Corrosivity (pH)	S.U.	---	---	6.09	-	---	---	7.48	-	---	---	6.27	-	---	---	6.08	-	---	---
Flashpoint	°F	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---
Percent Moisture	%	---	---	40	-	---	---	40	-	---	---	76	-	---	---	62	-	---	---
Reactive Cyanide	mg/kg	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---
Reactive Sulfide	mg/kg	---	---	2	U	---	---	2.4	-	---	---	2	U	---	---	30.4	-	---	---
TCLP Metals																			
Arsenic	mg/L	---	---	3.88	-	---	---	0.654	-	---	---	0.126	-	---	---	0.05	U	---	---
Barium	mg/L	---	---	0.050	-	---	---	0.056	-	---	---	0.05	U	---	---	0.119	-	---	---
Cadmium	mg/L	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---
Chromium	mg/L	---	---	0.02	U	---	---	0.02	U	---	---	0.052	-	---	---	0.024	-	---	---
Lead	mg/L	---	---	0.092	-	---	---	0.05	U	---	---	0.067	-	---	---	0.05	U	---	---
Mercury	mg/L	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---
Selenium	mg/L	---	---	0.05	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---
Silver	mg/L	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---

Laboratory Sample Designation		1709556-10		1709556-11		1709556-12		1709556-13		1709556-14		1709556-15		1709556-16		1709556-17		1709556-18	
Sample Designation		SED-C-75 (0-2_1')		SED-G-75 (1_26-1_68')		SED-C-74 (0-5_7')		SED-G-74 (4_56-5_7')		SED-C-73 (0-1_7')		SED-G-73 (0_34-0_68')		SED-C-72 (0-1_9')		SED-G-72 (0_76-1_14')		SED-C-69 (0-3_5') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
VOCs - Low																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,1,1-Trichloroethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	0.0019	U	---	---	0.0017	U	---	---	0.0014	U	---	---	0.0023	U	---	---
1,1,2-Trichloroethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,1-Dichloroethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,1-Dichloroethene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,1-Dichloropropene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,2,3-Trichloropropane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,2-Dibromoethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,2-Dichlorobenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,2-Dichloroethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,2-Dichloropropane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,3-Dichlorobenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,3-Dichloropropane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,4-Dichlorobenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
1,4-Dioxane	mg/kg	---	---	0.0948	U	---	---	0.0837	U	---	---	0.0694	U	---	---	0.115	U	---	---
2,2-Dichloropropane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
2-Butanone	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0084	-	---	---	0.0128	-	---	---
2-Chlorotoluene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
2-Hexanone	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0069	U	---	---	0.0115	U	---	---
4-Chlorotoluene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
4-Isopropyltoluene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0069	U	---	---	0.0115	U	---	---
Acetone	mg/kg	---	---	0.0197	-	---	---	0.0084	U	---	---	0.0624	-	---	---	0.0973	-	---	---
Benzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Bromobenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Bromochloromethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Bromodichloromethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Bromoform	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Bromomethane	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0069	U	---	---	0.0115	U	---	---
Carbon Disulfide	mg/kg	---	---	0.0056	-	---	---	0.0046	-	---	---	0.0035	U	---	---	0.0058	U	---	---
Carbon Tetrachloride	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Chlorobenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Chloroethane	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0069	U	---	---	0.0115	U	---	---
Chloroform	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Chloromethane	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0069	U	---	---	0.0115	U	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Dibromochloromethane	mg/kg	---	---	0.0019	U	---	---	0.0017	U	---	---	0.0014	U	---	---	0.0023	U	---	---
Dibromomethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Dichlorodifluoromethane	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0069	U	---	---	0.0115	U	---	---

Laboratory Sample Designation		1709556-10		1709556-11		1709556-12		1709556-13		1709556-14		1709556-15		1709556-16		1709556-17		1709556-18	
Sample Designation		SED-C-75 (0-2_1')		SED-G-75 (1_26-1_68')		SED-C-74 (0-5_7')		SED-G-74 (4_56-5_7')		SED-C-73 (0-1_7')		SED-G-73 (0_34-0_68')		SED-C-72 (0-1_9')		SED-G-72 (0_76-1_14')		SED-C-69 (0-3_5') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Diethyl Ether	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Di-isopropyl ether	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Ethylbenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Hexachlorobutadiene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Isopropylbenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Methylene Chloride	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0069	U	---	---	0.0115	U	---	---
Naphthalene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
n-Butylbenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
n-Propylbenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
sec-Butylbenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Styrene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
tert-Butylbenzene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Tetrachloroethene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Tetrahydrofuran	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Toluene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Trichloroethene	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Trichlorofluoromethane	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Vinyl Chloride	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0069	U	---	---	0.0115	U	---	---
Xylene O	mg/kg	---	---	0.0047	U	---	---	0.0042	U	---	---	0.0035	U	---	---	0.0058	U	---	---
Xylene P,M	mg/kg	---	---	0.0095	U	---	---	0.0084	U	---	---	0.0069	U	---	---	0.0115	U	---	---
VOCs																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709556-10		1709556-11		1709556-12		1709556-13		1709556-14		1709556-15		1709556-16		1709556-17		1709556-18	
Sample Designation		SED-C-75 (0-2_1')		SED-G-75 (1_26-1_68')		SED-C-74 (0-5_7')		SED-G-74 (4_56-5_7')		SED-C-73 (0-1_7')		SED-G-73 (0_34-0_68')		SED-C-72 (0-1_9')		SED-G-72 (0_76-1_14')		SED-C-69 (0-3_5') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709556-10		1709556-11		1709556-12		1709556-13		1709556-14		1709556-15		1709556-16		1709556-17		1709556-18	
Sample Designation		SED-C-75 (0-2_1')		SED-G-75 (1_26-1_68')		SED-C-74 (0-5_7')		SED-G-74 (4_56-5_7')		SED-C-73 (0-1_7')		SED-G-73 (0_34-0_68')		SED-C-72 (0-1_9')		SED-G-72 (0_76-1_14')		SED-C-69 (0-3_5') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																			
1,2,4-Trichlorobenzene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
1,2-Dichlorobenzene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
1,3-Dichlorobenzene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2,4-Dichlorophenol	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2,4-Dimethylphenol	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2,4-Dinitrophenol	mg/kg	2.42	U	---	---	2.53	U	---	---	2.22	U	---	---	2.68	U	---	---	---	---
2,4-Dinitrotoluene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2,6-Dinitrotoluene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2-Chloronaphthalene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2-Chlorophenol	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2-Methylnaphthalene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2-Methylphenol	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
2-Nitrophenol	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	0.966	U	---	---	0.253	U	---	---	0.886	U	---	---	0.268	U	---	---	---	---
3+4-Methylphenol	mg/kg	0.966	U	---	---	1.01	U	---	---	0.886	U	---	---	1.07	U	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
4-Chloroaniline	mg/kg	0.966	U	---	---	0.253	U	---	---	0.886	U	---	---	0.268	U	---	---	---	---
4-Nitrophenol	mg/kg	2.42	U	---	---	2.53	U	---	---	2.22	U	---	---	2.68	U	---	---	---	---
Acenaphthene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Acenaphthylene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Acetophenone	mg/kg	0.966	U	---	---	1.01	U	---	---	0.886	U	---	---	1.07	U	---	---	---	---
Aniline	mg/kg	2.42	U	---	---	2.53	U	---	---	2.22	U	---	---	2.68	U	---	---	---	---
Anthracene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Azobenzene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Benzo(a)anthracene	mg/kg	0.482	U	---	---	0.543	-	---	---	0.443	U	---	---	0.611	-	---	---	---	---
Benzo(a)pyrene	mg/kg	0.242	U	---	---	0.725	-	---	---	0.222	U	---	---	0.579	-	---	---	---	---
Benzo(b)fluoranthene	mg/kg	0.482	U	---	---	0.945	-	---	---	0.443	U	---	---	0.765	-	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	0.482	U	---	---	0.537	-	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Benzo(k)fluoranthene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	0.482	U	---	---	**175**	D	---	---	2.18	-	---	---	2.74	-	---	---	---	---
Butylbenzylphthalate	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Chrysene	mg/kg	0.242	U	---	---	0.735	-	---	---	0.295	-	---	---	0.646	-	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.242	U	---	---	0.253	U	---	---	0.222	U	---	---	0.268	U	---	---	---	---
Dibenzofuran	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Diethylphthalate	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---

Laboratory Sample Designation		1709556-10		1709556-11		1709556-12		1709556-13		1709556-14		1709556-15		1709556-16		1709556-17		1709556-18	
Sample Designation		SED-C-75 (0-2_1')		SED-G-75 (1_26-1_68')		SED-C-74 (0-5_7')		SED-G-74 (4_56-5_7')		SED-C-73 (0-1_7')		SED-G-73 (0_34-0_68')		SED-C-72 (0-1_9')		SED-G-72 (0_76-1_14')		SED-C-69 (0-3_5') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Dimethylphthalate	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Di-n-butylphthalate	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Di-n-octylphthalate	mg/kg	0.482	U	---	---	2.38	-	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Fluoranthene	mg/kg	0.482	U	---	---	0.676	-	---	---	0.443	U	---	---	0.781	-	---	---	---	---
Fluorene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Hexachlorobenzene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Hexachlorobutadiene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Hexachloroethane	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Isophorone	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Naphthalene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Nitrobenzene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
N-Nitrosodimethylamine	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Pentachlorophenol	mg/kg	2.42	U	---	---	2.53	U	---	---	2.22	U	---	---	2.68	U	---	---	---	---
Phenanthrene	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Phenol	mg/kg	0.482	U	---	---	0.505	U	---	---	0.443	U	---	---	0.534	U	---	---	---	---
Pyrene	mg/kg	0.482	U	---	---	0.973	-	---	---	0.443	U	---	---	0.865	-	---	---	---	---
Pyridine	mg/kg	2.42	U	---	---	2.53	U	---	---	2.22	U	---	---	2.68	U	---	---	---	---
Total Metals																			
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**477**	-
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	31.9	-
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.51	U, D
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	32.3	-
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**235**	-
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.35	D
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.03	U
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.5	U
Pesticides																			
4,4´-DDD	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
4,4´-DDE	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0065	-	---	---	0.0067	-	---	---	---	---
4,4´-DDT	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Aldrin	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
alpha-BHC	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
alpha-Chlordane	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
beta-BHC	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Chlordane (Total)	mg/kg	0.0299	U	---	---	0.0303	U	---	---	0.0265	U	---	---	0.0329	U	---	---	---	---
delta-BHC	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Dieldrin	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Endosulfan I	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Endosulfan II	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Endosulfan Sulfate	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Endrin	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Endrin Ketone	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
gamma-BHC (Lindane)	mg/kg	0.0022	U	---	---	0.0023	U	---	---	0.002	U	---	---	0.0025	U	---	---	---	---
gamma-Chlordane	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---

Laboratory Sample Designation		1709556-10		1709556-11		1709556-12		1709556-13		1709556-14		1709556-15		1709556-16		1709556-17		1709556-18	
Sample Designation		SED-C-75 (0-2_1')		SED-G-75 (1_26-1_68')		SED-C-74 (0-5_7')		SED-G-74 (4_56-5_7')		SED-C-73 (0-1_7')		SED-G-73 (0_34-0_68')		SED-C-72 (0-1_9')		SED-G-72 (0_76-1_14')		SED-C-69 (0-3_5') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Heptachlor	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Heptachlor Epoxide	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Hexachlorobenzene	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Methoxychlor	mg/kg	0.0037	U	---	---	0.0038	U	---	---	0.0033	U	---	---	0.0041	U	---	---	---	---
Toxaphene	mg/kg	0.187	U	---	---	0.189	U	---	---	0.165	U	---	---	0.206	U	---	---	---	---
PCBs																			
Aroclor 1016	mg/kg	0.08	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U	---	---	---	---
Aroclor 1221	mg/kg	0.08	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U	---	---	---	---
Aroclor 1232	mg/kg	0.08	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U	---	---	---	---
Aroclor 1242	mg/kg	0.08	U	---	---	0.2	-	---	---	0.07	U	---	---	0.1	-	---	---	---	---
Aroclor 1248	mg/kg	0.08	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U	---	---	---	---
Aroclor 1254	mg/kg	0.08	U	---	---	0.6	-	---	---	0.5	-	---	---	0.4	-	---	---	---	---
Aroclor 1260	mg/kg	0.08	U	---	---	0.2	-	---	---	0.2	-	---	---	0.1	-	---	---	---	---
Aroclor 1262	mg/kg	0.08	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U	---	---	---	---
Aroclor 1268	mg/kg	0.08	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U	---	---	---	---
Herbicides																			
2,4,5-T	mg/kg	0.025	U	---	---	0.141	U, D	---	---	0.026	U	---	---	0.031	U	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	0.025	U	---	---	0.458	LC, P, D	---	---	0.026	U	---	---	0.031	U	---	---	---	---
2,4-D	mg/kg	0.123	U	---	---	0.699	U, D	---	---	0.13	U	---	---	0.155	U	---	---	---	---
2,4-DB	mg/kg	0.125	U	---	---	0.706	U, D	---	---	0.131	U	---	---	0.156	U	---	---	---	---
Dalapon	mg/kg	0.119	U	---	---	0.676	U, D	---	---	0.126	U	---	---	0.15	U	---	---	---	---
Dicamba	mg/kg	0.025	U	---	---	0.486	LC, P, D	---	---	0.113	-	---	---	0.090	LC, P	---	---	---	---
Dichlorprop	mg/kg	0.123	U	---	---	0.699	U, D	---	---	0.13	U	---	---	0.155	U	---	---	---	---
Dinoseb	mg/kg	0.125	U	---	---	0.706	U, D	---	---	0.131	U	---	---	0.156	U	---	---	---	---
MCPA	mg/kg	6.11	U	---	---	34.6	#	---	---	6.43	U	---	---	7.65	#	---	---	---	---
MCPP	mg/kg	6.17	#	---	---	34.9	#	---	---	6.50	#	---	---	7.74	#	---	---	---	---
Classical Chemistry																			
Corrosivity (pH)	S.U.	6.98	-	---	---	6.92	-	---	---	7.50	-	---	---	7.09	-	---	---	---	---
Flashpoint	°F	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---	---	---
Percent Moisture	%	33	-	---	---	35	-	---	---	28	-	---	---	40	-	---	---	---	---
Reactive Cyanide	mg/kg	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---	---	---
Reactive Sulfide	mg/kg	2.1	-	---	---	2	U	---	---	17.8	-	---	---	13.9	-	---	---	---	---
TCLP Metals																			
Arsenic	mg/L	0.072	-	---	---	0.095	-	---	---	0.142	-	---	---	0.226	-	---	---	---	---
Barium	mg/L	0.114	-	---	---	0.070	-	---	---	0.077	-	---	---	0.069	-	---	---	---	---
Cadmium	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	---	---
Chromium	mg/L	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	---	---
Lead	mg/L	0.05	U	---	---	0.304	-	---	---	0.174	-	---	---	0.207	-	---	---	---	---
Mercury	mg/L	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	---	---
Selenium	mg/L	0.1	U	---	---	0.05	U	---	---	0.05	U	---	---	0.25	U, D	---	---	---	---
Silver	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	---	---

Laboratory Sample Designation		1709556-19		1709556-20		1709556-21		1709556-22		1709556-23		1709556-24		1709556-25	
Sample Designation		SED-C-68 (0-3_1') Dried		SED-C-77 (0-6_4') Dried		SED-C-76 (0-7_7') Dried		SED-C-75 (0-2_1') Dried		SED-C-74 (0-5_7') Dried		SED-C-73 (0-1_7') Dried		SED-C-72 (0-1_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth															
Soil Type															
Group Designation															
VOCs - Low															
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709556-19		1709556-20		1709556-21		1709556-22		1709556-23		1709556-24		1709556-25	
Sample Designation		SED-C-68 (0-3_1') Dried		SED-C-77 (0-6_4') Dried		SED-C-76 (0-7_7') Dried		SED-C-75 (0-2_1') Dried		SED-C-74 (0-5_7') Dried		SED-C-73 (0-1_7') Dried		SED-C-72 (0-1_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth															
Soil Type															
Group Designation															
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VOCs															
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709556-19		1709556-20		1709556-21		1709556-22		1709556-23		1709556-24		1709556-25	
Sample Designation		SED-C-68 (0-3_1') Dried		SED-C-77 (0-6_4') Dried		SED-C-76 (0-7_7') Dried		SED-C-75 (0-2_1') Dried		SED-C-74 (0-5_7') Dried		SED-C-73 (0-1_7') Dried		SED-C-72 (0-1_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth															
Soil Type															
Group Designation															
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709556-19		1709556-20		1709556-21		1709556-22		1709556-23		1709556-24		1709556-25	
Sample Designation		SED-C-68 (0-3_1') Dried		SED-C-77 (0-6_4') Dried		SED-C-76 (0-7_7') Dried		SED-C-75 (0-2_1') Dried		SED-C-74 (0-5_7') Dried		SED-C-73 (0-1_7') Dried		SED-C-72 (0-1_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth															
Soil Type															
Group Designation															
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs															
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709556-19		1709556-20		1709556-21		1709556-22		1709556-23		1709556-24		1709556-25	
Sample Designation		SED-C-68 (0-3_1') Dried		SED-C-77 (0-6_4') Dried		SED-C-76 (0-7_7') Dried		SED-C-75 (0-2_1') Dried		SED-C-74 (0-5_7') Dried		SED-C-73 (0-1_7') Dried		SED-C-72 (0-1_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth															
Soil Type															
Group Designation															
Dimethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Metals															
Arsenic	mg/kg	**224**	-	**249**	-	**67.1**	-	13.0	-	**109**	-	**71.2**	-	**95.5**	-
Barium	mg/kg	46.3	-	68.1	-	33.5	-	22.3	-	46.1	-	32.6	-	43.6	-
Cadmium	mg/kg	0.48	U	1.71	-	0.54	-	0.35	U	0.36	U	0.47	U	0.46	U
Chromium	mg/kg	37.0	-	**169**	-	69.8	-	20.6	-	38.1	-	19.8	-	36.7	-
Lead	mg/kg	**239**	-	**392**	-	152	-	15.9	-	**203**	-	190	-	184	-
Mercury	mg/kg	1.08	D	0.035	U	0.760	D	0.100	-	1.24	D	0.815	D	0.830	D
Selenium	mg/kg	4.82	U	5.27	U, D	4.66	U, D	3.51	U	3.59	U	4.73	U	4.61	U
Silver	mg/kg	0.48	U	2.04	-	0.94	-	0.35	U	0.36	U	0.47	U	0.46	U
Pesticides															
4,4´-DDD	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709556-19		1709556-20		1709556-21		1709556-22		1709556-23		1709556-24		1709556-25	
Sample Designation		SED-C-68 (0-3_1') Dried		SED-C-77 (0-6_4') Dried		SED-C-76 (0-7_7') Dried		SED-C-75 (0-2_1') Dried		SED-C-74 (0-5_7') Dried		SED-C-73 (0-1_7') Dried		SED-C-72 (0-1_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth															
Soil Type															
Group Designation															
Heptachlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PCBs															
Aroclor 1016	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Herbicides															
2,4,5-T	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Classical Chemistry															
Corrosivity (pH)	S.U.	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TCLP Metals															
Arsenic	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-01		1709558-02		1709558-03		1709558-04		1709558-05		1709558-06		1709558-07		1709558-08		1709558-09		1709558-10	
Sample Designation		SED-C-93 (0-3_3')		SED-G-93 (2_64-3_3')		SED-C-94 (0-5_6')		SED-G-94 (1_12-2_24')		SED-C-38 (0-8_9')		SED-G-38 (5_34-7_12')		SED-C-Dup-3		SED-G-Dup-3		SED-C-65 (0-7_0')		SED-G-65 (1_4-2_8')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
VOCs - Low																					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,1,1-Trichloroethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,1,2,2-Tetrachloroethane	mg/kg	---	---	0.0047	U	---	---	0.0038	U	---	---	0.0043	U	---	---	**0.0077**	U	---	---	**0.0056**	-
1,1,2-Trichloroethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,1-Dichloroethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,1-Dichloroethene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,1-Dichloropropene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,2,3-Trichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,2,3-Trichloropropane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,2,4-Trichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,2,4-Trimethylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,2-Dibromoethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,2-Dichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,2-Dichloroethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,2-Dichloropropane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,3,5-Trimethylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,3-Dichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,3-Dichloropropane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,4-Dichlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
1,4-Dioxane	mg/kg	---	---	**0.235**	U	---	---	0.189	U	---	---	**0.215**	U	---	---	**0.387**	U	---	---	**0.243**	U
2,2-Dichloropropane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
2-Butanone	mg/kg	---	---	0.0238	-	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
2-Chlorotoluene	mg/kg	---	---	0.247	-	---	---	0.0094	U	---	---	0.0108	U	---	---	0.259	-	---	---	0.0121	U
2-Hexanone	mg/kg	---	---	0.0235	U	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
4-Chlorotoluene	mg/kg	---	---	0.0405	-	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0415	-	---	---	0.0121	U
4-Isopropyltoluene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
4-Methyl-2-Pentanone	mg/kg	---	---	0.0235	U	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
Acetone	mg/kg	---	---	0.145	-	---	---	0.102	-	---	---	0.0315	-	---	---	0.134	-	---	---	0.178	-
Benzene	mg/kg	---	---	0.0132	-	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Bromobenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Bromochloromethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Bromodichloromethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Bromoform	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Bromomethane	mg/kg	---	---	0.0235	U	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
Carbon Disulfide	mg/kg	---	---	0.0174	-	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Carbon Tetrachloride	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Chlorobenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Chloroethane	mg/kg	---	---	0.0235	U	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
Chloroform	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Chloromethane	mg/kg	---	---	0.0235	U	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
cis-1,2-Dichloroethene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
cis-1,3-Dichloropropene	mg/kg	---	---	**0.0118**	U	---	---	0.0094	U	---	---	**0.0108**	U	---	---	**0.0194**	U	---	---	**0.0121**	U
Dibromochloromethane	mg/kg	---	---	0.0047	U	---	---	0.0038	U	---	---	0.0043	U	---	---	**0.0077**	U	---	---	0.0049	U
Dibromomethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U

Laboratory Sample Designation		1709558-01		1709558-02		1709558-03		1709558-04		1709558-05		1709558-06		1709558-07		1709558-08		1709558-09		1709558-10	
Sample Designation		SED-C-93 (0-3_3')		SED-G-93 (2_64-3_3')		SED-C-94 (0-5_6')		SED-G-94 (1_12-2_24')		SED-C-38 (0-8_9')		SED-G-38 (5_34-7_12')		SED-C-Dup-3		SED-G-Dup-3		SED-C-65 (0-7_0')		SED-G-65 (1_4-2_8')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Dichlorodifluoromethane	mg/kg	---	---	0.0235	U	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
Diethyl Ether	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0250	-	---	---	0.0194	U	---	---	0.0161	-
Di-isopropyl ether	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Ethyl tertiary-butyl ether	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Ethylbenzene	mg/kg	---	---	0.0269	-	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0327	-	---	---	0.0121	U
Hexachlorobutadiene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Isopropylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Methyl tert-Butyl Ether	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Methylene Chloride	mg/kg	---	---	0.0235	U	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
Naphthalene	mg/kg	---	---	0.0252	-	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0359	-	---	---	0.0121	U
n-Butylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
n-Propylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
sec-Butylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Styrene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
tert-Butylbenzene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Tertiary-amyl methyl ether	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Tetrachloroethene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Tetrahydrofuran	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Toluene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
trans-1,2-Dichloroethene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
trans-1,3-Dichloropropene	mg/kg	---	---	**0.0118**	U	---	---	0.0094	U	---	---	**0.0108**	U	---	---	**0.0194**	U	---	---	**0.0121**	U
Trichloroethene	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Trichlorofluoromethane	mg/kg	---	---	0.0118	U	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0194	U	---	---	0.0121	U
Vinyl Chloride	mg/kg	---	---	0.0235	U	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
Xylene O	mg/kg	---	---	0.0182	-	---	---	0.0094	U	---	---	0.0108	U	---	---	0.0209	-	---	---	0.0121	U
Xylene P,M	mg/kg	---	---	0.0235	U	---	---	0.0189	U	---	---	0.0215	U	---	---	0.0387	U	---	---	0.0243	U
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VOCs																					
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-01		1709558-02		1709558-03		1709558-04		1709558-05		1709558-06		1709558-07		1709558-08		1709558-09		1709558-10	
Sample Designation		SED-C-93 (0-3_3')		SED-G-93 (2_64-3_3')		SED-C-94 (0-5_6')		SED-G-94 (1_12-2_24')		SED-C-38 (0-8_9')		SED-G-38 (5_34-7_12')		SED-C-Dup-3		SED-G-Dup-3		SED-C-65 (0-7_0')		SED-G-65 (1_4-2_8')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-01		1709558-02		1709558-03		1709558-04		1709558-05		1709558-06		1709558-07		1709558-08		1709558-09		1709558-10	
Sample Designation		SED-C-93 (0-3_3')		SED-G-93 (2_64-3_3')		SED-C-94 (0-5_6')		SED-G-94 (1_12-2_24')		SED-C-38 (0-8_9')		SED-G-38 (5_34-7_12')		SED-C-Dup-3		SED-G-Dup-3		SED-C-65 (0-7_0')		SED-G-65 (1_4-2_8')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																					
1,2,4-Trichlorobenzene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
1,2-Dichlorobenzene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.982	-	---	---	0.852	U	---	---	0.777	U	---	---
1,3-Dichlorobenzene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
1,4-Dichlorobenzene	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
2,4,5-Trichlorophenol	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
2,4,6-Trichlorophenol	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
2,4-Dichlorophenol	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
2,4-Dimethylphenol	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
2,4-Dinitrophenol	mg/kg	1.81	U	---	---	1.76	U	---	---	1.89	U	---	---	1.71	U	---	---	1.56	U	---	---
2,4-Dinitrotoluene	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
2,6-Dinitrotoluene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
2-Chloronaphthalene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
2-Chlorophenol	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
2-Methylnaphthalene	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
2-Methylphenol	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
2-Nitrophenol	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
3,3´-Dichlorobenzidine	mg/kg	0.454	U	---	---	0.877	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
3+4-Methylphenol	mg/kg	1.81	U	---	---	1.76	U	---	---	1.89	U	---	---	1.71	U	---	---	1.56	U	---	---
4-Bromophenyl-phenylether	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
4-Chloroaniline	mg/kg	0.454	U	---	---	0.877	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
4-Nitrophenol	mg/kg	4.54	U	---	---	4.4	U	---	---	4.74	U	---	---	4.27	U	---	---	3.9	U	---	---
Acenaphthene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Acenaphthylene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Acetophenone	mg/kg	1.81	U	---	---	1.76	U	---	---	1.89	U	---	---	1.71	U	---	---	1.56	U	---	---
Aniline	mg/kg	4.54	U	---	---	4.4	U	---	---	4.74	U	---	---	4.27	U	---	---	3.9	U	---	---
Anthracene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Azobenzene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Benzo(a)anthracene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Benzo(a)pyrene	mg/kg	0.454	U	---	---	0.44	U	---	---	0.633	-	---	---	0.427	U	---	---	0.39	U	---	---
Benzo(b)fluoranthene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Benzo(g,h,i)perylene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Benzo(k)fluoranthene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
bis(2-Chloroethoxy)methane	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
bis(2-Chloroethyl)ether	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
bis(2-chloroisopropyl)Ether	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	**771**	D	---	---	**241**	D	---	---	**128**	D	---	---	**300**	D	---	---	**302**	D	---	---

Laboratory Sample Designation		1709558-01		1709558-02		1709558-03		1709558-04		1709558-05		1709558-06		1709558-07		1709558-08		1709558-09		1709558-10	
Sample Designation		SED-C-93 (0-3_3')		SED-G-93 (2_64-3_3')		SED-C-94 (0-5_6')		SED-G-94 (1_12-2_24')		SED-C-38 (0-8_9')		SED-G-38 (5_34-7_12')		SED-C-Dup-3		SED-G-Dup-3		SED-C-65 (0-7_0')		SED-G-65 (1_4-2_8')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Butylbenzylphthalate	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Chrysene	mg/kg	0.454	U	---	---	0.44	U	---	---	0.719	-	---	---	0.427	U	---	---	0.39	U	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
Dibenzofuran	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Diethylphthalate	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Dimethylphthalate	mg/kg	**0.906**	U	---	---	**0.877**	U	---	---	**0.946**	U	---	---	**0.852**	U	---	---	**0.777**	U	---	---
Di-n-butylphthalate	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Di-n-octylphthalate	mg/kg	52.7	D	---	---	3.18	-	---	---	3.41	-	---	---	30.9	D	---	---	38.7	D	---	---
Fluoranthene	mg/kg	0.906	U	---	---	0.877	U	---	---	1.24	-	---	---	0.852	U	---	---	0.777	U	---	---
Fluorene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Hexachlorobenzene	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
Hexachlorobutadiene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Hexachloroethane	mg/kg	0.454	U	---	---	0.44	U	---	---	0.474	U	---	---	0.427	U	---	---	0.39	U	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Isophorone	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Naphthalene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Nitrobenzene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
N-Nitrosodimethylamine	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Pentachlorophenol	mg/kg	1.81	U	---	---	1.76	U	---	---	1.89	U	---	---	1.71	U	---	---	1.56	U	---	---
Phenanthrene	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Phenol	mg/kg	0.906	U	---	---	0.877	U	---	---	0.946	U	---	---	0.852	U	---	---	0.777	U	---	---
Pyrene	mg/kg	0.906	U	---	---	0.877	U	---	---	1.27	-	---	---	0.852	U	---	---	0.777	U	---	---
Pyridine	mg/kg	4.54	U	---	---	4.4	U	---	---	4.74	U	---	---	4.27	U	---	---	3.9	U	---	---
Total Metals																					
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																					
4,4´-DDD	mg/kg	0.0067	U	---	---	0.0167	-	---	---	0.0215	-	---	---	0.0066	U	---	---	0.0058	U	---	---
4,4´-DDE	mg/kg	0.0067	U	---	---	0.0115	LC, P	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
4,4´-DDT	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Aldrin	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
alpha-BHC	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
alpha-Chlordane	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
beta-BHC	mg/kg	0.0230	LC, P	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Chlordane (Total)	mg/kg	0.0539	U	---	---	0.0524	U	---	---	0.0601	U	---	---	0.0526	U	---	---	0.0464	U	---	---
delta-BHC	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Dieldrin	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Endosulfan I	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0141	LC, P	---	---	0.0113	LC, P	---	---

Laboratory Sample Designation		1709558-01		1709558-02		1709558-03		1709558-04		1709558-05		1709558-06		1709558-07		1709558-08		1709558-09		1709558-10	
Sample Designation		SED-C-93 (0-3_3')		SED-G-93 (2_64-3_3')		SED-C-94 (0-5_6')		SED-G-94 (1_12-2_24')		SED-C-38 (0-8_9')		SED-G-38 (5_34-7_12')		SED-C-Dup-3		SED-G-Dup-3		SED-C-65 (0-7_0')		SED-G-65 (1_4-2_8')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Endosulfan II	mg/kg	0.0113	LC, P	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0114	LC, P	---	---	0.0106	LC, P	---	---
Endosulfan Sulfate	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Endrin	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Endrin Ketone	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
gamma-BHC (Lindane)	mg/kg	**0.004**	U	---	---	**0.0039**	U	---	---	**0.0045**	U	---	---	**0.0039**	U	---	---	**0.0035**	U	---	---
gamma-Chlordane	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Heptachlor	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Heptachlor Epoxide	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Hexachlorobenzene	mg/kg	0.0105	LC, P	---	---	0.0098	LC, P	---	---	0.0379	LC, P	---	---	0.0105	LC, P	---	---	0.0058	U	---	---
Methoxychlor	mg/kg	0.0067	U	---	---	0.0066	U	---	---	0.0075	U	---	---	0.0066	U	---	---	0.0058	U	---	---
Toxaphene	mg/kg	0.337	U	---	---	0.328	U	---	---	0.376	U	---	---	0.329	U	---	---	0.29	U	---	---
PCBs																					
Aroclor 1016	mg/kg	0.1	U	---	---	**1.7**	-	---	---	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1221	mg/kg	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1232	mg/kg	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1242	mg/kg	**2.4**	-	---	---	0.1	U	---	---	0.5	-	---	---	**1.6**	-	---	---	0.8	-	---	---
Aroclor 1248	mg/kg	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1254	mg/kg	**2.4**	-	---	---	0.1	U	---	---	0.6	-	---	---	**1.4**	-	---	---	**1.5**	-	---	---
Aroclor 1260	mg/kg	0.7	-	---	---	**1.2**	-	---	---	0.3	-	---	---	0.1	U	---	---	0.4	P	---	---
Aroclor 1262	mg/kg	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---
Aroclor 1268	mg/kg	0.1	U	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---
Herbicides																					
2,4,5-T	mg/kg	0.052	U	---	---	0.048	U	---	---	0.057	U	---	---	0.047	U	---	---	0.044	U	---	---
2,4,5-TP (Silvex)	mg/kg	0.052	U	---	---	0.048	U	---	---	0.057	U	---	---	0.047	U	---	---	0.103	LC, P	---	---
2,4-D	mg/kg	0.256	U	---	---	0.238	U	---	---	0.281	U	---	---	0.23	U	---	---	0.219	U	---	---
2,4-DB	mg/kg	0.258	U	---	---	0.241	U	---	---	0.284	U	---	---	0.233	U	---	---	0.222	U	---	---
Dalapon	mg/kg	0.248	U	---	---	0.23	U	---	---	0.272	U	---	---	0.223	U	---	---	0.212	U	---	---
Dicamba	mg/kg	0.070	LC, P	---	---	0.177	LC, P	---	---	0.056	U	---	---	0.142	-	---	---	0.126	LC, P	---	---
Dichlorprop	mg/kg	0.256	U	---	---	0.238	U	---	---	0.281	U	---	---	0.23	U	---	---	0.891	-	---	---
Dinoseb	mg/kg	0.258	U	---	---	0.241	U	---	---	0.284	U	---	---	0.233	U	---	---	0.222	U	---	---
MCPA	mg/kg	12.6	U	---	---	11.8	#	---	---	13.9	#	---	---	11.4	#	---	---	10.8	#	---	---
MCPP	mg/kg	12.8	#	---	---	11.9	#	---	---	14.1	#	---	---	11.5	#	---	---	11.0	#	---	---
Classical Chemistry																					
Corrosivity (pH)	S.U.	7.62	-	---	---	7.46	-	---	---	7.37	-	---	---	7.38	-	---	---	6.60	-	---	---
Flashpoint	°F	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---
Percent Moisture	%	63	-	---	---	62	-	---	---	67	-	---	---	62	-	---	---	57	-	---	---
Reactive Cyanide	mg/kg	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---
Reactive Sulfide	mg/kg	2	U	---	---	399	-	---	---	2	U	---	---	2	U	---	---	28.7	-	---	---
TCLP Metals																					
Arsenic	mg/L	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---
Barium	mg/L	0.213	-	---	---	0.05	U	---	---	0.05	U	---	---	0.206	-	---	---	0.05	U	---	---
Cadmium	mg/L	0.0162	-	---	---	0.01	U	---	---	0.01	U	---	---	0.0174	-	---	---	0.01	U	---	---

Laboratory Sample Designation		1709558-01		1709558-02		1709558-03		1709558-04		1709558-05		1709558-06		1709558-07		1709558-08		1709558-09		1709558-10	
Sample Designation		SED-C-93 (0-3_3')		SED-G-93 (2_64-3_3')		SED-C-94 (0-5_6')		SED-G-94 (1_12-2_24')		SED-C-38 (0-8_9')		SED-G-38 (5_34-7_12')		SED-C-Dup-3		SED-G-Dup-3		SED-C-65 (0-7_0')		SED-G-65 (1_4-2_8')	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																					
Soil Type																					
Group Designation																					
Chromium	mg/L	0.053	-	---	---	0.02	U	---	---	0.02	U	---	---	0.046	-	---	---	0.038	-	---	---
Lead	mg/L	0.216	-	---	---	0.05	U	---	---	0.05	U	---	---	0.196	-	---	---	0.05	U	---	---
Mercury	mg/L	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---
Selenium	mg/L	0.25	U, D	---	---	0.25	U, D	---	---	0.1	U	---	---	0.25	U, D	---	---	0.25	U, D	---	---
Silver	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---

Laboratory Sample Designation		1709558-11		1709558-12		1709558-13		1709558-14		1709558-15		1709558-16		1709558-17		1709558-18		1709558-19	
Sample Designation		SED-C-40 (0-8_9')		SED-G-40 (1_78-3_56')		SED-C-39 (0-9_8')		SED-G-39 (7_84-9_8')		SED-C-66 (0-10_3')		Trip Blank-6		SED-C-93 (0-3_3') Dried		SED-C-94 (0-5_6') Dried		SED-C-38 (0-8_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
VOCs - Low																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	**0.006**	U	---	---	**0.006**	U	---	---	0.002	U	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	**11.6**	E	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	0.921	E	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	**3.98**	E	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
1,4-Dioxane	mg/kg	---	---	**0.301**	U	---	---	**0.301**	U	---	---	0.1	U	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	0.144	-	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	0.0301	U	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	0.0301	U	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
Acetone	mg/kg	---	---	1.12	-	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
Benzene	mg/kg	---	---	0.0410	-	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Bromoform	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	0.0301	U	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	0.0188	-	---	---	0.0166	-	---	---	0.005	U	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	**7.40**	E	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	0.0301	U	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
Chloroform	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	0.0301	U	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	**0.0151**	U	---	---	**0.015**	U	---	---	0.005	U	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	**0.006**	U	---	---	**0.006**	U	---	---	0.002	U	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---

Laboratory Sample Designation		1709558-11		1709558-12		1709558-13		1709558-14		1709558-15		1709558-16		1709558-17		1709558-18		1709558-19	
Sample Designation		SED-C-40 (0-8_9')		SED-G-40 (1_78-3_56')		SED-C-39 (0-9_8')		SED-G-39 (7_84-9_8')		SED-C-66 (0-10_3')		Trip Blank-6		SED-C-93 (0-3_3') Dried		SED-C-94 (0-5_6') Dried		SED-C-38 (0-8_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Dichlorodifluoromethane	mg/kg	---	---	0.0301	U	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	0.0155	-	---	---	0.0426	-	---	---	0.005	U	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	0.0407	-	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	0.0186	-	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	0.0301	U	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	0.0176	-	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	0.0156	-	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	0.0272	-	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Styrene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Toluene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	**0.0151**	U	---	---	**0.015**	U	---	---	0.005	U	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	0.0301	U	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
Xylene O	mg/kg	---	---	0.0151	U	---	---	0.015	U	---	---	0.005	U	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	0.0301	U	---	---	0.0301	U	---	---	0.01	U	---	---	---	---	---	---
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	0.0075	U	---	---	---	---	---	---
VOCs																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	5.55	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	**442**	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-11		1709558-12		1709558-13		1709558-14		1709558-15		1709558-16		1709558-17		1709558-18		1709558-19	
Sample Designation		SED-C-40 (0-8_9')		SED-G-40 (1_78-3_56')		SED-C-39 (0-9_8')		SED-G-39 (7_84-9_8')		SED-C-66 (0-10_3')		Trip Blank-6		SED-C-93 (0-3_3') Dried		SED-C-94 (0-5_6') Dried		SED-C-38 (0-8_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
1,3-Dichlorobenzene	mg/kg	---	---	**4.60**	-	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	**23.9**	-	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	**222**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	**5.55**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	5.55	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	**5.55**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	5.55	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	**55.2**	-	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	**2.22**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	5.55	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-11		1709558-12		1709558-13		1709558-14		1709558-15		1709558-16		1709558-17		1709558-18		1709558-19	
Sample Designation		SED-C-40 (0-8_9')		SED-G-40 (1_78-3_56')		SED-C-39 (0-9_8')		SED-G-39 (7_84-9_8')		SED-C-66 (0-10_3')		Trip Blank-6		SED-C-93 (0-3_3') Dried		SED-C-94 (0-5_6') Dried		SED-C-38 (0-8_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Toluene	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	**1.11**	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	1.11	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	2.22	U	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																			
1,2,4-Trichlorobenzene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	**15.9**	-	---	---	2.10	-	---	---	0.801	U	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	0.514	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.577	-	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	**1.10**	-	---	---	**0.704**	-	---	---	0.402	U	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	2.05	U	---	---	1.7	U	---	---	1.61	U	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	2.05	U	---	---	1.7	U	---	---	1.61	U	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	5.14	U	---	---	4.26	U	---	---	4.02	U	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	0.514	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	2.05	U	---	---	1.7	U	---	---	1.61	U	---	---	---	---	---	---	---	---
Aniline	mg/kg	5.14	U	---	---	4.26	U	---	---	4.02	U	---	---	---	---	---	---	---	---
Anthracene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	0.514	U	---	---	0.735	-	---	---	0.490	-	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	1.02	U	---	---	1.03	-	---	---	0.801	U	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	79.6	D	---	---	**205**	D	---	---	**203**	D	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-11		1709558-12		1709558-13		1709558-14		1709558-15		1709558-16		1709558-17		1709558-18		1709558-19	
Sample Designation		SED-C-40 (0-8_9')		SED-G-40 (1_78-3_56')		SED-C-39 (0-9_8')		SED-G-39 (7_84-9_8')		SED-C-66 (0-10_3')		Trip Blank-6		SED-C-93 (0-3_3') Dried		SED-C-94 (0-5_6') Dried		SED-C-38 (0-8_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Butylbenzylphthalate	mg/kg	1.02	U	---	---	6.71	-	---	---	1.44	-	---	---	---	---	---	---	---	---
Chrysene	mg/kg	0.514	U	---	---	0.829	-	---	---	0.585	-	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	**1.02**	U	---	---	**0.85**	U	---	---	**0.801**	U	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	1.02	U	---	---	1.82	-	---	---	0.801	U	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	17.0	-	---	---	27.2	D	---	---	21.4	D	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	1.02	U	---	---	1.60	-	---	---	1.15	-	---	---	---	---	---	---	---	---
Fluorene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	0.514	U	---	---	0.426	U	---	---	0.402	U	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Isophorone	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	1.02	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	2.05	U	---	---	1.7	U	---	---	1.61	U	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	1.02	U	---	---	0.85	U	---	---	0.971	-	---	---	---	---	---	---	---	---
Phenol	mg/kg	0.514	U	---	---	0.85	U	---	---	0.801	U	---	---	---	---	---	---	---	---
Pyrene	mg/kg	1.02	U	---	---	1.37	-	---	---	1.11	-	---	---	---	---	---	---	---	---
Pyridine	mg/kg	5.14	U	---	---	4.26	U	---	---	4.02	U	---	---	---	---	---	---	---	---
Total Metals																			
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**57.5**	-	**43.8**	-	**89.7**	-
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	79.1	-	84.3	-	81.6	-
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	3.47	-	2.45	-	2.49	-
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**143**	-	99.8	-	**109**	-
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	**340**	-	**235**	-	**458**	-
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	1.23	D	0.785	D	1.79	D
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	20.6	EL, U, D	19.7	EL, U, D	20	EL, U, D
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	3.48	-	1.49	-	2.77	-
Pesticides																			
4,4´-DDD	mg/kg	0.0076	U	---	---	0.0313	-	---	---	0.0064	U	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Aldrin	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	0.0609	U	---	---	0.0526	U	---	---	0.0513	U	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	0.0191	LC, P	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	0.0084	LC, P	---	---	0.0141	LC, P	---	---	0.0116	LC, P	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-11		1709558-12		1709558-13		1709558-14		1709558-15		1709558-16		1709558-17		1709558-18		1709558-19	
Sample Designation		SED-C-40 (0-8_9')		SED-G-40 (1_78-3_56')		SED-C-39 (0-9_8')		SED-G-39 (7_84-9_8')		SED-C-66 (0-10_3')		Trip Blank-6		SED-C-93 (0-3_3') Dried		SED-C-94 (0-5_6') Dried		SED-C-38 (0-8_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Endosulfan II	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0098	LC, P	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Endrin	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	**0.0046**	U	---	---	**0.0039**	U	---	---	**0.0038**	U	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	0.0076	U	---	---	0.0169	LC, P	---	---	0.0064	U	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	0.0076	U	---	---	0.0066	U	---	---	0.0064	U	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	0.381	U	---	---	0.329	U	---	---	0.32	U	---	---	---	---	---	---	---	---
PCBs																			
Aroclor 1016	mg/kg	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	0.6	-	---	---	0.7	P	---	---	0.6	-	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	1.0	-	---	---	0.9	-	---	---	**1.8**	-	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	0.3	-	---	---	0.2	LC, P	---	---	0.4	P	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	0.2	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	---	---	---	---
Herbicides																			
2,4,5-T	mg/kg	0.058	U	---	---	0.045	U	---	---	0.048	U	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	0.058	U	---	---	0.045	U	---	---	0.066	LC, P	---	---	---	---	---	---	---	---
2,4-D	mg/kg	0.289	U	---	---	0.222	U	---	---	0.24	U	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	0.292	U	---	---	0.225	U	---	---	0.242	U	---	---	---	---	---	---	---	---
Dalapon	mg/kg	0.28	U	---	---	0.215	U	---	---	0.232	U	---	---	---	---	---	---	---	---
Dicamba	mg/kg	0.067	-	---	---	0.044	U	---	---	0.146	-	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	0.333	LC, P	---	---	0.222	U	---	---	0.276	LC, P	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	0.292	U	---	---	0.225	U	---	---	0.242	U	---	---	---	---	---	---	---	---
MCPA	mg/kg	14.3	U	---	---	11	U	---	---	11.9	#	---	---	---	---	---	---	---	---
MCPP	mg/kg	14.5	#	---	---	11.1	#	---	---	12.0	#	---	---	---	---	---	---	---	---
Classical Chemistry																			
Corrosivity (pH)	S.U.	6.57	-	---	---	6.29	-	---	---	7.02	-	---	---	---	---	---	---	---	---
Flashpoint	°F	200	>	---	---	200	>	---	---	200	>	---	---	---	---	---	---	---	---
Percent Moisture	%	68	-	---	---	62	-	---	---	61	-	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	2	U	---	---	2	U	---	---	2	U	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	2	U	---	---	9.4	-	---	---	24.5	-	---	---	---	---	---	---	---	---
TCLP Metals																			
Arsenic	mg/L	0.083	-	---	---	0.073	-	---	---	0.185	-	---	---	---	---	---	---	---	---
Barium	mg/L	0.199	-	---	---	0.05	U	---	---	0.05	U	---	---	---	---	---	---	---	---
Cadmium	mg/L	0.0119	-	---	---	0.01	U	---	---	0.01	U	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-11		1709558-12		1709558-13		1709558-14		1709558-15		1709558-16		1709558-17		1709558-18		1709558-19	
Sample Designation		SED-C-40 (0-8_9')		SED-G-40 (1_78-3_56')		SED-C-39 (0-9_8')		SED-G-39 (7_84-9_8')		SED-C-66 (0-10_3')		Trip Blank-6		SED-C-93 (0-3_3') Dried		SED-C-94 (0-5_6') Dried		SED-C-38 (0-8_9') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Chromium	mg/L	0.025	-	---	---	0.02	U	---	---	0.02	U	---	---	---	---	---	---	---	---
Lead	mg/L	0.399	-	---	---	0.05	U	---	---	0.05	U	---	---	---	---	---	---	---	---
Mercury	mg/L	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	---	---	---	---	---	---
Selenium	mg/L	0.05	U	---	---	0.1	U	---	---	0.25	U, D	---	---	---	---	---	---	---	---
Silver	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-20		1709558-21		1709558-22		1709558-23		1709558-24	
Sample Designation		SED-C-Dup-3 Dried		SED-C-65 (0-7_0') Dried		SED-C-40 (0-8_9') Dried		SED-C-39 (0-9_8') Dried		SED-C-66 (0-10_3') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth											
Soil Type											
Group Designation											
VOCs - Low											
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-20		1709558-21		1709558-22		1709558-23		1709558-24	
Sample Designation		SED-C-Dup-3 Dried		SED-C-65 (0-7_0') Dried		SED-C-40 (0-8_9') Dried		SED-C-39 (0-9_8') Dried		SED-C-66 (0-10_3') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth											
Soil Type											
Group Designation											
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---
VOCs											
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-20		1709558-21		1709558-22		1709558-23		1709558-24	
Sample Designation		SED-C-Dup-3 Dried		SED-C-65 (0-7_0') Dried		SED-C-40 (0-8_9') Dried		SED-C-39 (0-9_8') Dried		SED-C-66 (0-10_3') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth											
Soil Type											
Group Designation											
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-20		1709558-21		1709558-22		1709558-23		1709558-24	
Sample Designation		SED-C-Dup-3 Dried		SED-C-65 (0-7_0') Dried		SED-C-40 (0-8_9') Dried		SED-C-39 (0-9_8') Dried		SED-C-66 (0-10_3') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth											
Soil Type											
Group Designation											
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---
SVOCs											
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-20		1709558-21		1709558-22		1709558-23		1709558-24	
Sample Designation		SED-C-Dup-3 Dried		SED-C-65 (0-7_0') Dried		SED-C-40 (0-8_9') Dried		SED-C-39 (0-9_8') Dried		SED-C-66 (0-10_3') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth											
Soil Type											
Group Designation											
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	---	---	---	---	---	---	---	---	---	---
Total Metals											
Arsenic	mg/kg	**49.3**	-	**353**	-	**104**	-	**72.3**	-	**237**	-
Barium	mg/kg	76.6	-	75.0	-	86.2	-	83.1	-	88.7	-
Cadmium	mg/kg	3.12	-	1.62	-	2.60	-	2.07	-	1.53	-
Chromium	mg/kg	**140**	-	**111**	-	**113**	-	89.5	-	86.8	-
Lead	mg/kg	**309**	-	**454**	-	**434**	-	**352**	-	**405**	-
Mercury	mg/kg	1.12	D	2.87	D	4.40	D	1.43	D	2.13	D
Selenium	mg/kg	18.9	EL, U, D	20.9	EL, U, D	18.9	EL, U, D	18.6	EL, U, D	19.8	EL, U, D
Silver	mg/kg	3.01	-	2.17	-	3.34	-	3.29	-	2.17	-
Pesticides											
4,4´-DDD	mg/kg	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-20		1709558-21		1709558-22		1709558-23		1709558-24	
Sample Designation		SED-C-Dup-3 Dried		SED-C-65 (0-7_0') Dried		SED-C-40 (0-8_9') Dried		SED-C-39 (0-9_8') Dried		SED-C-66 (0-10_3') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth											
Soil Type											
Group Designation											
Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	---	---	---	---	---	---	---	---
PCBs											
Aroclor 1016	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---	---	---	---	---	---	---
Herbicides											
2,4,5-T	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	---	---	---	---	---	---	---	---	---	---
Classical Chemistry											
Corrosivity (pH)	S.U.	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---	---	---	---	---	---	---
TCLP Metals											
Arsenic	mg/L	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709558-20		1709558-21		1709558-22		1709558-23		1709558-24	
Sample Designation		SED-C-Dup-3 Dried		SED-C-65 (0-7_0') Dried		SED-C-40 (0-8_9') Dried		SED-C-39 (0-9_8') Dried		SED-C-66 (0-10_3') Dried	
Sample Date		09/19/2017		09/19/2017		09/19/2017		09/19/2017		09/19/2017	
Sample Depth											
Soil Type											
Group Designation											
Chromium	mg/L	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709627-01		1709627-02		1709627-03		1709627-04		1709627-05		1709627-06		1709627-06RE1		1709627-07		1709627-08	
Sample Designation		SED-C-70 (0-2_8')		SED-G-70 (1_12-1_68')		SED-C-71 (0-1_7')		SED-G-71 (0_34-0_68')		SED-C-10 (0-2_9')		SED-G-10 (0_58-1_16')		SED-G-10 (0_58-1_16')		SED-C-72-2 (03_1')		SED-G-72-2 (2_48-3_1')	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
VOCs - Low																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,1,1-Trichloroethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,1,2,2-Tetrachloroethane	mg/kg	---	---	0.0023	U	---	---	0.0023	U	---	---	0.0043	U	0.0043	U	---	---	0.0026	U
1,1,2-Trichloroethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,1-Dichloroethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,1-Dichloroethene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,1-Dichloropropene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,2,3-Trichlorobenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,2,3-Trichloropropane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,2,4-Trichlorobenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,2,4-Trimethylbenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,2-Dibromoethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,2-Dichlorobenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0244	-	0.0200	-	---	---	0.0065	U
1,2-Dichloroethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,2-Dichloropropane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,3,5-Trimethylbenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,3-Dichlorobenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,3-Dichloropropane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,4-Dichlorobenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
1,4-Dioxane	mg/kg	---	---	0.115	U	---	---	0.116	U	---	---	**0.216**	U	**0.213**	U	---	---	0.129	U
2,2-Dichloropropane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
2-Butanone	mg/kg	---	---	0.0122	-	---	---	0.0116	U	---	---	0.0263	-	0.0213	U	---	---	0.0129	U
2-Chlorotoluene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
2-Hexanone	mg/kg	---	---	0.0115	U	---	---	0.0116	U	---	---	0.0216	U	0.0213	U	---	---	0.0129	U
4-Chlorotoluene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
4-Isopropyltoluene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
4-Methyl-2-Pentanone	mg/kg	---	---	0.0115	U	---	---	0.0116	U	---	---	0.0216	U	0.0213	U	---	---	0.0129	U
Acetone	mg/kg	---	---	0.0696	-	---	---	0.0633	-	---	---	0.160	-	0.0629	-	---	---	0.0138	-
Benzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Bromobenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Bromochloromethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Bromodichloromethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Bromoform	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Bromomethane	mg/kg	---	---	0.0115	U	---	---	0.0116	U	---	---	0.0216	U	0.0213	U	---	---	0.0129	U
Carbon Disulfide	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0311	-	0.0106	U	---	---	0.0130	-
Carbon Tetrachloride	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Chlorobenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0407	-	0.0289	-	---	---	0.0065	U
Chloroethane	mg/kg	---	---	0.0115	U	---	---	0.0116	U	---	---	0.0216	U	0.0213	U	---	---	0.0129	U
Chloroform	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Chloromethane	mg/kg	---	---	0.0115	U	---	---	0.0116	U	---	---	0.0216	U	0.0213	U	---	---	0.0129	U
cis-1,2-Dichloroethene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
cis-1,3-Dichloropropene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	**0.0108**	U	**0.0106**	U	---	---	0.0065	U

Laboratory Sample Designation		1709627-01		1709627-02		1709627-03		1709627-04		1709627-05		1709627-06		1709627-06RE1		1709627-07		1709627-08	
Sample Designation		SED-C-70 (0-2_8')		SED-G-70 (1_12-1_68')		SED-C-71 (0-1_7')		SED-G-71 (0_34-0_68')		SED-C-10 (0-2_9')		SED-G-10 (0_58-1_16')		SED-G-10 (0_58-1_16')		SED-C-72-2 (03_1')		SED-G-72-2 (2_48-3_1')	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Dibromochloromethane	mg/kg	---	---	0.0023	U	---	---	0.0023	U	---	---	0.0043	U	0.0043	U	---	---	0.0026	U
Dibromomethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Dichlorodifluoromethane	mg/kg	---	---	0.0115	U	---	---	0.0116	U	---	---	0.0216	U	0.0213	U	---	---	0.0129	U
Diethyl Ether	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Di-isopropyl ether	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Ethyl tertiary-butyl ether	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Ethylbenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Hexachlorobutadiene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Isopropylbenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Methyl tert-Butyl Ether	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Methylene Chloride	mg/kg	---	---	0.0115	U	---	---	0.0116	U	---	---	0.0216	U	0.0213	U	---	---	0.0129	U
Naphthalene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
n-Butylbenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
n-Propylbenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
sec-Butylbenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Styrene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
tert-Butylbenzene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Tertiary-amyl methyl ether	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Tetrachloroethene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Tetrahydrofuran	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Toluene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
trans-1,2-Dichloroethene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
trans-1,3-Dichloropropene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	**0.0108**	U	**0.0106**	U	---	---	0.0065	U
Trichloroethene	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Trichlorofluoromethane	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Vinyl Chloride	mg/kg	---	---	0.0115	U	---	---	0.0116	U	---	---	0.0216	U	0.0213	U	---	---	0.0129	U
Xylene O	mg/kg	---	---	0.0058	U	---	---	0.0058	U	---	---	0.0108	U	0.0106	U	---	---	0.0065	U
Xylene P,M	mg/kg	---	---	0.0115	U	---	---	0.0116	U	---	---	0.0216	U	0.0213	U	---	---	0.0129	U
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																			
1,2,4-Trichlorobenzene	mg/kg	1.46	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
1,2-Dichlorobenzene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
1,3-Dichlorobenzene	mg/kg	0.787	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
1,4-Dichlorobenzene	mg/kg	**0.787**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
2,4,5-Trichlorophenol	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
2,4,6-Trichlorophenol	mg/kg	**1.46**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
2,4-Dichlorophenol	mg/kg	**0.787**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
2,4-Dimethylphenol	mg/kg	**0.787**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
2,4-Dinitrophenol	mg/kg	**5.83**	U	---	---	2.46	U	---	---	1.63	U	---	---	---	---	2.4	U	---	---
2,4-Dinitrotoluene	mg/kg	**1.46**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
2,6-Dinitrotoluene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
2-Chloronaphthalene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
2-Chlorophenol	mg/kg	**0.875**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---

Laboratory Sample Designation		1709627-01		1709627-02		1709627-03		1709627-04		1709627-05		1709627-06		1709627-06RE1		1709627-07		1709627-08	
Sample Designation		SED-C-70 (0-2_8')		SED-G-70 (1_12-1_68')		SED-C-71 (0-1_7')		SED-G-71 (0_34-0_68')		SED-C-10 (0-2_9')		SED-G-10 (0_58-1_16')		SED-G-10 (0_58-1_16')		SED-C-72-2 (03_1')		SED-G-72-2 (2_48-3_1')	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
2-Methylnaphthalene	mg/kg	**0.726**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
2-Methylphenol	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
2-Nitrophenol	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
3,3´-Dichlorobenzidine	mg/kg	0.726	U	---	---	0.982	U	---	---	0.816	U	---	---	---	---	0.957	U	---	---
3+4-Methylphenol	mg/kg	5.83	U	---	---	0.982	U	---	---	1.63	U	---	---	---	---	0.957	U	---	---
4-Bromophenyl-phenylether	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
4-Chloroaniline	mg/kg	0.726	U	---	---	0.982	U	---	---	0.816	U	---	---	---	---	0.957	U	---	---
4-Nitrophenol	mg/kg	14.6	U	---	---	2.46	U	---	---	4.09	U	---	---	---	---	2.4	U	---	---
Acenaphthene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Acenaphthylene	mg/kg	0.726	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Acetophenone	mg/kg	5.83	U	---	---	0.982	U	---	---	1.63	U	---	---	---	---	0.957	U	---	---
Aniline	mg/kg	14.6	U	---	---	2.46	U	---	---	4.09	U	---	---	---	---	2.4	U	---	---
Anthracene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Azobenzene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Benzo(a)anthracene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Benzo(a)pyrene	mg/kg	1.46	U	---	---	0.246	U	---	---	0.409	U	---	---	---	---	0.24	U	---	---
Benzo(b)fluoranthene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Benzo(g,h,i)perylene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Benzo(k)fluoranthene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
bis(2-Chloroethoxy)methane	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
bis(2-Chloroethyl)ether	mg/kg	**0.787**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
bis(2-chloroisopropyl)Ether	mg/kg	**0.787**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	42.4	-	---	---	4.80	-	---	---	12.2	D	---	---	---	---	0.478	U	---	---
Butylbenzylphthalate	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Chrysene	mg/kg	1.70	-	---	---	0.246	U	---	---	0.409	U	---	---	---	---	0.24	U	---	---
Dibenzo(a,h)Anthracene	mg/kg	0.466	U	---	---	0.246	U	---	---	0.409	U	---	---	---	---	0.24	U	---	---
Dibenzofuran	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Diethylphthalate	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Dimethylphthalate	mg/kg	**2.91**	U	---	---	0.49	U	---	---	**0.816**	U	---	---	---	---	0.478	U	---	---
Di-n-butylphthalate	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Di-n-octylphthalate	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Fluoranthene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Fluorene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Hexachlorobenzene	mg/kg	0.583	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
Hexachlorobutadiene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Hexachloroethane	mg/kg	**0.787**	U	---	---	0.49	U	---	---	0.409	U	---	---	---	---	0.478	U	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Isophorone	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Naphthalene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Nitrobenzene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
N-Nitrosodimethylamine	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Pentachlorophenol	mg/kg	**5.83**	U	---	---	2.46	U	---	---	1.63	U	---	---	---	---	2.4	U	---	---
Phenanthrene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Phenol	mg/kg	0.787	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---

Laboratory Sample Designation		1709627-01		1709627-02		1709627-03		1709627-04		1709627-05		1709627-06		1709627-06RE1		1709627-07		1709627-08	
Sample Designation		SED-C-70 (0-2_8')		SED-G-70 (1_12-1_68')		SED-C-71 (0-1_7')		SED-G-71 (0_34-0_68')		SED-C-10 (0-2_9')		SED-G-10 (0_58-1_16')		SED-G-10 (0_58-1_16')		SED-C-72-2 (03_1')		SED-G-72-2 (2_48-3_1')	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Pyrene	mg/kg	2.91	U	---	---	0.49	U	---	---	0.816	U	---	---	---	---	0.478	U	---	---
Pyridine	mg/kg	14.6	U	---	---	2.46	U	---	---	4.09	U	---	---	---	---	2.4	U	---	---
Total Metals																			
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																			
4,4´-DDD	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
4,4´-DDE	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
4,4´-DDT	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Aldrin	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
alpha-BHC	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
alpha-Chlordane	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
beta-BHC	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Chlordane (Total)	mg/kg	0.029	U	---	---	0.0293	U	---	---	0.0498	U	---	---	---	---	0.0298	U	---	---
delta-BHC	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Dieldrin	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Endosulfan I	mg/kg	0.0060	LC, P	---	---	0.0053	-	---	---	0.0091	-	---	---	---	---	0.0037	U	---	---
Endosulfan II	mg/kg	0.0043	LC, P	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Endosulfan Sulfate	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Endrin	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Endrin Ketone	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
gamma-BHC (Lindane)	mg/kg	0.0022	U	---	---	0.0022	U	---	---	**0.0037**	U	---	---	---	---	0.0022	U	---	---
gamma-Chlordane	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Heptachlor	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Heptachlor Epoxide	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Hexachlorobenzene	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0238	LC, P	---	---	---	---	0.0037	U	---	---
Methoxychlor	mg/kg	0.0036	U	---	---	0.0037	U	---	---	0.0062	U	---	---	---	---	0.0037	U	---	---
Toxaphene	mg/kg	0.181	U	---	---	0.183	U	---	---	0.311	U	---	---	---	---	0.186	U	---	---
PCBs																			
Aroclor 1016	mg/kg	0.07	U	---	---	0.07	U	---	---	0.1	U	---	---	---	---	0.07	U	---	---
Aroclor 1221	mg/kg	0.07	U	---	---	0.07	U	---	---	0.1	U	---	---	---	---	0.07	U	---	---
Aroclor 1232	mg/kg	0.07	U	---	---	0.07	U	---	---	0.1	U	---	---	---	---	0.07	U	---	---
Aroclor 1242	mg/kg	0.1	-	---	---	0.1	-	---	---	0.7	-	---	---	---	---	0.1	-	---	---
Aroclor 1248	mg/kg	0.07	U	---	---	0.07	U	---	---	0.1	U	---	---	---	---	0.07	U	---	---
Aroclor 1254	mg/kg	**2.4**	D	---	---	**2.5**	D	---	---	**3.9**	D	---	---	---	---	0.4	-	---	---

Laboratory Sample Designation		1709627-01		1709627-02		1709627-03		1709627-04		1709627-05		1709627-06		1709627-06RE1		1709627-07		1709627-08	
Sample Designation		SED-C-70 (0-2_8')		SED-G-70 (1_12-1_68')		SED-C-71 (0-1_7')		SED-G-71 (0_34-0_68')		SED-C-10 (0-2_9')		SED-G-10 (0_58-1_16')		SED-G-10 (0_58-1_16')		SED-C-72-2 (03_1')		SED-G-72-2 (2_48-3_1')	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Aroclor 1260	mg/kg	0.4	-	---	---	0.5	-	---	---	**1.3**	-	---	---	---	---	0.1	-	---	---
Aroclor 1262	mg/kg	0.07	U	---	---	0.07	U	---	---	0.1	U	---	---	---	---	0.07	U	---	---
Aroclor 1268	mg/kg	0.07	U	---	---	0.07	U	---	---	0.1	U	---	---	---	---	0.07	U	---	---
Herbicides																			
2,4,5-T	mg/kg	0.687	LC, P, D	---	---	0.027	U	---	---	0.043	U	---	---	---	---	0.027	U	---	---
2,4,5-TP (Silvex)	mg/kg	0.12	U, D	---	---	0.130	LC, P	---	---	0.043	U	---	---	---	---	0.138	LC, P	---	---
2,4-D	mg/kg	1.81	LC, P, D	---	---	0.135	U	---	---	0.211	U	---	---	---	---	0.393	LC, P	---	---
2,4-DB	mg/kg	0.6	U, D	---	---	0.136	U	---	---	0.213	U	---	---	---	---	0.136	U	---	---
Dalapon	mg/kg	0.575	U, D	---	---	0.131	U	---	---	0.204	U	---	---	---	---	0.131	U	---	---
Dicamba	mg/kg	0.119	U, D	---	---	0.092	LC, P	---	---	0.042	U	---	---	---	---	0.027	U	---	---
Dichlorprop	mg/kg	0.594	U, D	---	---	0.341	LC, P	---	---	0.211	U	---	---	---	---	0.799	-	---	---
Dinoseb	mg/kg	0.6	U, D	---	---	0.164	LC, P	---	---	0.213	U	---	---	---	---	0.152	LC, P	---	---
MCPA	mg/kg	29.4	U, D	---	---	6.67	#	---	---	10.4	U	---	---	---	---	6.67	#	---	---
MCPP	mg/kg	29.7	#	---	---	6.74	#	---	---	10.6	#	---	---	---	---	6.74	#	---	---
Classical Chemistry																			
Corrosivity (pH)	S.U.	6.06	-	---	---	6.41	-	---	---	7.72	-	---	---	---	---	7.35	-	---	---
Flashpoint	°F	200	>	---	---	200	>	---	---	200	>	---	---	---	---	200	>	---	---
Percent Moisture	%	32	-	---	---	33	-	---	---	60	-	---	---	---	---	34	-	---	---
Reactive Cyanide	mg/kg	2	U	---	---	2	U	---	---	2	U	---	---	---	---	2	U	---	---
Reactive Sulfide	mg/kg	23.5	-	---	---	257	-	---	---	8.0	-	---	---	---	---	11.2	-	---	---
TCLP Metals																			
Arsenic	mg/L	0.252	-	---	---	0.525	-	---	---	0.05	U	---	---	---	---	0.05	U	---	---
Barium	mg/L	0.152	-	---	---	0.110	-	---	---	0.109	-	---	---	---	---	0.056	-	---	---
Cadmium	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	---	---	0.01	U	---	---
Chromium	mg/L	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	---	---	0.02	U	---	---
Lead	mg/L	0.05	U	---	---	0.566	-	---	---	0.05	U	---	---	---	---	0.05	U	---	---
Mercury	mg/L	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	---	---	0.0005	U	---	---
Selenium	mg/L	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---	0.2	U, D	---	---
Silver	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	---	---	0.01	U	---	---

Laboratory Sample Designation		1709627-09		1709627-10		1709627-11		1709627-12		1709627-13	
Sample Designation		Trip Blank-7		SED-C-70 (0-2_8') Dried		SED-C-71 (0-1_7') Dried		SED-C-10 (0-2_9') Dried		SED-C-72-2 (0-3_1') Dried	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth											
Soil Type											
Group Designation											
VOCs - Low											
1,1,1,2-Tetrachloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	0.002	U	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	0.1	U	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	0.01	U	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	0.01	U	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	0.01	U	---	---	---	---	---	---	---	---
Acetone	mg/kg	0.01	U	---	---	---	---	---	---	---	---
Benzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Bromoform	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	0.01	U	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	0.01	U	---	---	---	---	---	---	---	---
Chloroform	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	0.01	U	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	0.005	U	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709627-09		1709627-10		1709627-11		1709627-12		1709627-13	
Sample Designation		Trip Blank-7		SED-C-70 (0-2_8') Dried		SED-C-71 (0-1_7') Dried		SED-C-10 (0-2_9') Dried		SED-C-72-2 (0-3_1') Dried	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth											
Soil Type											
Group Designation											
Dibromochloromethane	mg/kg	0.002	U	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	0.01	U	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	0.01	U	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Styrene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Toluene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	0.01	U	---	---	---	---	---	---	---	---
Xylene O	mg/kg	0.005	U	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	0.01	U	---	---	---	---	---	---	---	---
Xylenes (Total)	mg/kg	0.0075	U	---	---	---	---	---	---	---	---
SVOCs											
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709627-09		1709627-10		1709627-11		1709627-12		1709627-13	
Sample Designation		Trip Blank-7		SED-C-70 (0-2_8') Dried		SED-C-71 (0-1_7') Dried		SED-C-10 (0-2_9') Dried		SED-C-72-2 (0-3_1') Dried	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth											
Soil Type											
Group Designation											
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709627-09		1709627-10		1709627-11		1709627-12		1709627-13	
Sample Designation		Trip Blank-7		SED-C-70 (0-2_8') Dried		SED-C-71 (0-1_7') Dried		SED-C-10 (0-2_9') Dried		SED-C-72-2 (0-3_1') Dried	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth											
Soil Type											
Group Designation											
Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	---	---	---	---	---	---	---	---	---	---
Total Metals											
Arsenic	mg/kg	---	---	**186**	-	**102**	-	**165**	-	15.8	-
Barium	mg/kg	---	---	56.1	-	42.2	-	78.1	-	24.2	-
Cadmium	mg/kg	---	---	0.47	U	0.46	U	1.98	-	0.44	U
Chromium	mg/kg	---	---	31.8	-	29.5	-	98.1	-	25.0	-
Lead	mg/kg	---	---	**388**	-	**301**	-	**521**	-	40.1	-
Mercury	mg/kg	---	---	2.41	D	2.47	D	2.60	D	0.105	-
Selenium	mg/kg	---	---	18.7	EL, U, D	18.5	EL, U, D	19.4	EL, U, D	17.5	EL, U, D
Silver	mg/kg	---	---	0.59	-	0.46	U	2.15	-	0.44	U
Pesticides											
4,4´-DDD	mg/kg	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---
Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	---	---	---	---	---	---	---	---
PCBs											
Aroclor 1016	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709627-09		1709627-10		1709627-11		1709627-12		1709627-13	
Sample Designation		Trip Blank-7		SED-C-70 (0-2_8') Dried		SED-C-71 (0-1_7') Dried		SED-C-10 (0-2_9') Dried		SED-C-72-2 (0-3_1') Dried	
Sample Date		09/21/2017		09/21/2017		09/21/2017		09/21/2017		09/21/2017	
Sample Depth											
Soil Type											
Group Designation											
Aroclor 1260	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---	---	---	---	---	---	---
Herbicides											
2,4,5-T	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	---	---	---	---	---	---	---	---	---	---
Classical Chemistry											
Corrosivity (pH)	S.U.	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---	---	---	---	---	---	---
TCLP Metals											
Arsenic	mg/L	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	---	---	---	---	---	---	---	---	---	---
Chromium	mg/L	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709676-01		1709676-02		1709676-03		1709676-04		1709676-05		1709676-06		1709676-07		1709676-08		1709676-09	
Sample Designation		SED-C-70-2 (0-1_0')		SED-G-70-2 (0_2-0_4')		SED-C-69-2 (0-4_0')		SED-G-69-2 (3_2-4_0')		SED-C-71-2 (0-1_9')		SED-G-71-2 (0-0_38')		SED-C-DUP-4		SED-G-DUP-4		SED-C-65-2 (0-3_5')	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
VOCs - Low																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,1,1-Trichloroethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	0.0016	U	---	---	**0.0058**	U	---	---	0.0018	U	---	---	0.002	U	---	---
1,1,2-Trichloroethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,1-Dichloroethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,1-Dichloroethene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,1-Dichloropropene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,2,3-Trichloropropane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	0.004	U	---	---	0.0208	-	---	---	0.0046	U	---	---	0.0051	U	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,2-Dibromoethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,2-Dichlorobenzene	mg/kg	---	---	0.0058	-	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0078	-	---	---
1,2-Dichloroethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,2-Dichloropropane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,3-Dichlorobenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,3-Dichloropropane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
1,4-Dichlorobenzene	mg/kg	---	---	0.004	U	---	---	0.0331	-	---	---	0.0046	U	---	---	0.0051	U	---	---
1,4-Dioxane	mg/kg	---	---	0.0803	U	---	---	**0.291**	U	---	---	0.091	U	---	---	0.102	U	---	---
2,2-Dichloropropane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
2-Butanone	mg/kg	---	---	0.008	U	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
2-Chlorotoluene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
2-Hexanone	mg/kg	---	---	0.008	U	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
4-Chlorotoluene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
4-Isopropyltoluene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	0.008	U	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
Acetone	mg/kg	---	---	0.0550	-	---	---	0.122	-	---	---	0.0387	-	---	---	0.0347	-	---	---
Benzene	mg/kg	---	---	0.004	U	---	---	0.0174	-	---	---	0.0046	U	---	---	0.0051	U	---	---
Bromobenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Bromochloromethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Bromodichloromethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Bromoform	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Bromomethane	mg/kg	---	---	0.008	U	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
Carbon Disulfide	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Carbon Tetrachloride	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Chlorobenzene	mg/kg	---	---	0.004	U	---	---	0.251	-	---	---	0.0046	U	---	---	0.0097	-	---	---
Chloroethane	mg/kg	---	---	0.008	U	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
Chloroform	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Chloromethane	mg/kg	---	---	0.008	U	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	0.004	U	---	---	**0.0146**	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Dibromochloromethane	mg/kg	---	---	0.0016	U	---	---	**0.0058**	U	---	---	0.0018	U	---	---	0.002	U	---	---
Dibromomethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---

Laboratory Sample Designation		1709676-01		1709676-02		1709676-03		1709676-04		1709676-05		1709676-06		1709676-07		1709676-08		1709676-09	
Sample Designation		SED-C-70-2 (0-1_0')		SED-G-70-2 (0_2-0_4')		SED-C-69-2 (0-4_0')		SED-G-69-2 (3_2-4_0')		SED-C-71-2 (0-1_9')		SED-G-71-2 (0-0_38')		SED-C-DUP-4		SED-G-DUP-4		SED-C-65-2 (0-3_5')	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Dichlorodifluoromethane	mg/kg	---	---	0.008	U	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
Diethyl Ether	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Di-isopropyl ether	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Ethylbenzene	mg/kg	---	---	0.0050	-	---	---	0.0314	-	---	---	0.0046	U	---	---	0.0051	U	---	---
Hexachlorobutadiene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Isopropylbenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Methylene Chloride	mg/kg	---	---	0.008	U	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
Naphthalene	mg/kg	---	---	0.0131	-	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
n-Butylbenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
n-Propylbenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
sec-Butylbenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Styrene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
tert-Butylbenzene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Tetrachloroethene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Tetrahydrofuran	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Toluene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	0.004	U	---	---	**0.0146**	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Trichloroethene	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Trichlorofluoromethane	mg/kg	---	---	0.004	U	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Vinyl Chloride	mg/kg	---	---	0.008	U	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
Xylene O	mg/kg	---	---	0.0118	-	---	---	0.0146	U	---	---	0.0046	U	---	---	0.0051	U	---	---
Xylene P,M	mg/kg	---	---	0.0099	-	---	---	0.0291	U	---	---	0.0091	U	---	---	0.0102	U	---	---
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VOCs																			
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709676-01		1709676-02		1709676-03		1709676-04		1709676-05		1709676-06		1709676-07		1709676-08		1709676-09	
Sample Designation		SED-C-70-2 (0-1_0')		SED-G-70-2 (0_2-0_4')		SED-C-69-2 (0-4_0')		SED-G-69-2 (3_2-4_0')		SED-C-71-2 (0-1_9')		SED-G-71-2 (0-0_38')		SED-C-DUP-4		SED-G-DUP-4		SED-C-65-2 (0-3_5')	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709676-01		1709676-02		1709676-03		1709676-04		1709676-05		1709676-06		1709676-07		1709676-08		1709676-09	
Sample Designation		SED-C-70-2 (0-1_0')		SED-G-70-2 (0_2-0_4')		SED-C-69-2 (0-4_0')		SED-G-69-2 (3_2-4_0')		SED-C-71-2 (0-1_9')		SED-G-71-2 (0-0_38')		SED-C-DUP-4		SED-G-DUP-4		SED-C-65-2 (0-3_5')	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs																			
1,2,4-Trichlorobenzene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
1,2-Dichlorobenzene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
1,3-Dichlorobenzene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
1,4-Dichlorobenzene	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2,4,5-Trichlorophenol	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2,4,6-Trichlorophenol	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2,4-Dichlorophenol	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2,4-Dimethylphenol	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2,4-Dinitrophenol	mg/kg	1.78	U	---	---	1.53	U	---	---	2.62	U	---	---	2.38	U	---	---	1.26	U
2,4-Dinitrotoluene	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2,6-Dinitrotoluene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2-Chloronaphthalene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2-Chlorophenol	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2-Methylnaphthalene	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2-Methylphenol	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
2-Nitrophenol	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
3,3´-Dichlorobenzidine	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.95	U	---	---	0.63	U
3+4-Methylphenol	mg/kg	1.78	U	---	---	1.53	U	---	---	1.05	U	---	---	0.95	U	---	---	1.26	U
4-Bromophenyl-phenylether	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
4-Chloroaniline	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.95	U	---	---	0.63	U
4-Nitrophenol	mg/kg	4.47	U	---	---	3.83	U	---	---	2.62	U	---	---	2.38	U	---	---	3.16	U
Acenaphthene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Acenaphthylene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Acetophenone	mg/kg	1.78	U	---	---	1.53	U	---	---	1.05	U	---	---	0.95	U	---	---	1.26	U
Aniline	mg/kg	4.47	U	---	---	3.83	U	---	---	2.62	U	---	---	2.38	U	---	---	3.16	U
Anthracene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Azobenzene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Benzo(a)anthracene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.565	-	---	---	0.63	U
Benzo(a)pyrene	mg/kg	0.447	U	---	---	0.383	U	---	---	0.262	U	---	---	0.413	-	---	---	0.316	U
Benzo(b)fluoranthene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.579	-	---	---	0.63	U
Benzo(g,h,i)perylene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Benzo(k)fluoranthene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
bis(2-Chloroethoxy)methane	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
bis(2-Chloroethyl)ether	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
bis(2-chloroisopropyl)Ether	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
bis(2-Ethylhexyl)phthalate	mg/kg	18.6	-	---	---	5.57	-	---	---	8.10	-	---	---	4.48	-	---	---	46.5	D

Laboratory Sample Designation		1709676-01		1709676-02		1709676-03		1709676-04		1709676-05		1709676-06		1709676-07		1709676-08		1709676-09	
Sample Designation		SED-C-70-2 (0-1_0')		SED-G-70-2 (0_2-0_4')		SED-C-69-2 (0-4_0')		SED-G-69-2 (3_2-4_0')		SED-C-71-2 (0-1_9')		SED-G-71-2 (0-0_38')		SED-C-DUP-4		SED-G-DUP-4		SED-C-65-2 (0-3_5')	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Butylbenzylphthalate	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Chrysene	mg/kg	0.553	-	---	---	0.383	U	---	---	0.262	U	---	---	0.539	-	---	---	0.316	U
Dibenzo(a,h)Anthracene	mg/kg	0.447	U	---	---	0.383	U	---	---	0.262	U	---	---	0.238	U	---	---	0.316	U
Dibenzofuran	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Diethylphthalate	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Dimethylphthalate	mg/kg	**0.891**	U	---	---	**0.765**	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Di-n-butylphthalate	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Di-n-octylphthalate	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	12.4	-
Fluoranthene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	1.33	-	---	---	0.63	U
Fluorene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Hexachlorobenzene	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Hexachlorobutadiene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Hexachloroethane	mg/kg	0.447	U	---	---	0.383	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Indeno(1,2,3-cd)Pyrene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Isophorone	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Naphthalene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Nitrobenzene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
N-Nitrosodimethylamine	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Pentachlorophenol	mg/kg	1.78	U	---	---	1.53	U	---	---	2.62	U	---	---	2.38	U	---	---	1.26	U
Phenanthrene	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Phenol	mg/kg	0.891	U	---	---	0.765	U	---	---	0.522	U	---	---	0.474	U	---	---	0.63	U
Pyrene	mg/kg	0.921	-	---	---	0.765	U	---	---	0.522	U	---	---	0.926	-	---	---	0.63	U
Pyridine	mg/kg	4.47	U	---	---	3.83	U	---	---	2.62	U	---	---	2.38	U	---	---	3.16	U
Total Metals																			
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																			
4,4´-DDD	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
4,4´-DDE	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
4,4´-DDT	mg/kg	0.0033	U	---	---	0.0498	-	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Aldrin	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
alpha-BHC	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
alpha-Chlordane	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
beta-BHC	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Chlordane (Total)	mg/kg	0.0265	U	---	---	0.045	U	---	---	0.0308	U	---	---	0.0282	U	---	---	0.0372	U
delta-BHC	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Dieldrin	mg/kg	0.0117	LC, P	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Endosulfan I	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U

Laboratory Sample Designation		1709676-01		1709676-02		1709676-03		1709676-04		1709676-05		1709676-06		1709676-07		1709676-08		1709676-09	
Sample Designation		SED-C-70-2 (0-1_0')		SED-G-70-2 (0_2-0_4')		SED-C-69-2 (0-4_0')		SED-G-69-2 (3_2-4_0')		SED-C-71-2 (0-1_9')		SED-G-71-2 (0-0_38')		SED-C-DUP-4		SED-G-DUP-4		SED-C-65-2 (0-3_5')	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Endosulfan II	mg/kg	0.0042	LC, P	---	---	0.0056	U	---	---	0.0040	LC, P	---	---	0.0035	U	---	---	0.0047	U
Endosulfan Sulfate	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Endrin	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Endrin Ketone	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
gamma-BHC (Lindane)	mg/kg	0.002	U	---	---	0.0023	U	---	---	0.0023	U	---	---	0.0021	U	---	---	0.0028	U
gamma-Chlordane	mg/kg	0.0033	U	---	---	0.0197	-	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Heptachlor	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Heptachlor Epoxide	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Hexachlorobenzene	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Methoxychlor	mg/kg	0.0033	U	---	---	0.0056	U	---	---	0.0038	U	---	---	0.0035	U	---	---	0.0047	U
Toxaphene	mg/kg	0.165	U	---	---	0.281	U	---	---	0.192	U	---	---	0.176	U	---	---	0.233	U
PCBs																			
Aroclor 1016	mg/kg	0.07	U	---	---	0.1	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U
Aroclor 1221	mg/kg	0.07	U	---	---	0.1	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U
Aroclor 1232	mg/kg	0.07	U	---	---	0.1	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U
Aroclor 1242	mg/kg	0.4	U, D	---	---	0.7	-	---	---	0.08	U	---	---	0.07	U	---	---	0.8	D
Aroclor 1248	mg/kg	0.07	U	---	---	0.1	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U
Aroclor 1254	mg/kg	**2.6**	D	---	---	**2.2**	-	---	---	**1.1**	-	---	---	0.7	-	---	---	**2.7**	D
Aroclor 1260	mg/kg	0.9	D	---	---	0.7	-	---	---	0.2	-	---	---	0.2	-	---	---	0.7	D
Aroclor 1262	mg/kg	0.07	U	---	---	0.1	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U
Aroclor 1268	mg/kg	0.07	U	---	---	0.1	U	---	---	0.08	U	---	---	0.07	U	---	---	0.09	U
Herbicides																			
2,4,5-T	mg/kg	0.023	U	---	---	0.041	U	---	---	0.133	U, D	---	---	0.460	D	---	---	0.357	U, D
2,4,5-TP (Silvex)	mg/kg	0.023	U	---	---	0.041	U	---	---	0.133	U, D	---	---	0.121	U, D	---	---	6.43	LC, P, D
2,4-D	mg/kg	0.114	U	---	---	0.204	U	---	---	0.658	U, D	---	---	0.599	U, D	---	---	15.9	LC, P, D
2,4-DB	mg/kg	0.115	U	---	---	0.206	U	---	---	0.665	U, D	---	---	0.605	U, D	---	---	5.73	LC, P, D
Dalapon	mg/kg	0.11	U	---	---	0.197	U	---	---	0.637	U, D	---	---	0.58	U, D	---	---	1.71	U, D
Dicamba	mg/kg	0.023	U	---	---	0.132	LC, P	---	---	0.132	U, D	---	---	0.12	U, D	---	---	0.353	U, D
Dichlorprop	mg/kg	0.114	U	---	---	0.248	LC, P	---	---	2.72	D	---	---	1.21	LC, P, D	---	---	3.77	LC, P, D
Dinoseb	mg/kg	0.115	U	---	---	0.206	U	---	---	0.665	U, D	---	---	0.605	U, D	---	---	1.79	U, D
MCPA	mg/kg	5.64	#	---	---	10.1	#	---	---	32.6	U, D	---	---	29.6	U, D	---	---	87.4	#
MCPP	mg/kg	5.70	#	---	---	10.2	#	---	---	32.9	#	---	---	29.9	#	---	---	88.4	#
Classical Chemistry																			
Corrosivity (pH)	S.U.	6.46	-	---	---	7.54	-	---	---	6.61	-	---	---	6.54	-	---	---	7.76	-
Flashpoint	°F	200	>	---	---	200	>	---	---	200	>	---	---	200	>	---	---	200	>
Percent Moisture	%	28	-	---	---	57	-	---	---	36	-	---	---	31	-	---	---	48	-
Reactive Cyanide	mg/kg	2	U	---	---	2	U	---	---	2	U	---	---	2	U	---	---	2	U
Reactive Sulfide	mg/kg	332	-	---	---	11.8	-	---	---	3.5	-	---	---	56.9	-	---	---	101	-
TCLP Metals																			
Arsenic	mg/L	0.191	-	---	---	0.05	U	---	---	0.387	-	---	---	0.676	-	---	---	0.081	-
Barium	mg/L	0.053	-	---	---	0.107	-	---	---	0.287	-	---	---	0.126	-	---	---	0.137	-
Cadmium	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U

Laboratory Sample Designation		1709676-01		1709676-02		1709676-03		1709676-04		1709676-05		1709676-06		1709676-07		1709676-08		1709676-09	
Sample Designation		SED-C-70-2 (0-1_0')		SED-G-70-2 (0_2-0_4')		SED-C-69-2 (0-4_0')		SED-G-69-2 (3_2-4_0')		SED-C-71-2 (0-1_9')		SED-G-71-2 (0-0_38')		SED-C-DUP-4		SED-G-DUP-4		SED-C-65-2 (0-3_5')	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																			
Soil Type																			
Group Designation																			
Chromium	mg/L	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U
Lead	mg/L	0.05	U	---	---	0.05	U	---	---	0.522	-	---	---	0.509	-	---	---	0.05	U
Mercury	mg/L	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U
Selenium	mg/L	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U
Silver	mg/L	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U

Laboratory Sample Designation		1709676-10		1709676-11		1709676-12		1709676-13		1709676-14		1709676-15		1709676-16		1709676-17	
Sample Designation		SED-G-65-2 (2_8-3_5')		SED-C-66-2 (0-5_3')		SED-G-66-2 (3_1-4_24')		SED-C-68-2 (0-5_3')		SED-G-68-2 (4_24-5_3')		SED-C-67-2 (0-3_5')		SED-G-67-2 (2_8-3_5')		Trip Blank - 8	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
VOCs - Low																	
1,1,1,2-Tetrachloroethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,1,1-Trichloroethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,1,2,2-Tetrachloroethane	mg/kg	**0.0058**	U	---	---	0.0041	U	---	---	**0.0115**	U	---	---	**0.006**	U	0.002	U
1,1,2-Trichloroethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,1-Dichloroethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,1-Dichloroethene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,1-Dichloropropene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,2,3-Trichlorobenzene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,2,3-Trichloropropane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,2,4-Trichlorobenzene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,2,4-Trimethylbenzene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.675	-	---	---	0.0149	U	0.005	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,2-Dibromoethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,2-Dichlorobenzene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,2-Dichloroethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,2-Dichloropropane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,3,5-Trimethylbenzene	mg/kg	0.0867	-	---	---	0.0102	U	---	---	0.386	-	---	---	0.0149	U	0.005	U
1,3-Dichlorobenzene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,3-Dichloropropane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,4-Dichlorobenzene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
1,4-Dioxane	mg/kg	**0.289**	U	---	---	**0.203**	U	---	---	**0.573**	U	---	---	**0.298**	U	0.1	U
2,2-Dichloropropane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
2-Butanone	mg/kg	0.0289	U	---	---	0.0321	-	---	---	1.31	-	---	---	0.0629	-	0.01	U
2-Chlorotoluene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
2-Hexanone	mg/kg	0.0289	U	---	---	0.0203	U	---	---	0.214	-	---	---	0.0298	U	0.01	U
4-Chlorotoluene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
4-Isopropyltoluene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
4-Methyl-2-Pentanone	mg/kg	0.0289	U	---	---	0.0203	U	---	---	0.0573	U	---	---	0.0298	U	0.01	U
Acetone	mg/kg	0.256	-	---	---	0.364	-	---	---	**14.6**	E	---	---	0.427	-	0.01	U
Benzene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.145	-	---	---	0.0149	U	0.005	U
Bromobenzene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Bromochloromethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Bromodichloromethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Bromoform	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Bromomethane	mg/kg	0.0289	U	---	---	0.0203	U	---	---	0.0573	U	---	---	0.0298	U	0.01	U
Carbon Disulfide	mg/kg	0.0262	-	---	---	0.0202	-	---	---	0.383	-	---	---	0.0149	U	0.005	U
Carbon Tetrachloride	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Chlorobenzene	mg/kg	0.255	-	---	---	0.0186	-	---	---	0.0286	U	---	---	0.0981	-	0.005	U
Chloroethane	mg/kg	0.0289	U	---	---	0.0203	U	---	---	0.0573	U	---	---	0.0298	U	0.01	U
Chloroform	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Chloromethane	mg/kg	0.0289	U	---	---	0.0203	U	---	---	0.0573	U	---	---	0.0298	U	0.01	U
cis-1,2-Dichloroethene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
cis-1,3-Dichloropropene	mg/kg	**0.0145**	U	---	---	**0.0102**	U	---	---	**0.0286**	U	---	---	**0.0149**	U	0.005	U
Dibromochloromethane	mg/kg	**0.0058**	U	---	---	0.0041	U	---	---	**0.0115**	U	---	---	**0.006**	U	0.002	U
Dibromomethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U

Laboratory Sample Designation		1709676-10		1709676-11		1709676-12		1709676-13		1709676-14		1709676-15		1709676-16		1709676-17	
Sample Designation		SED-G-65-2 (2_8-3_5')		SED-C-66-2 (0-5_3')		SED-G-66-2 (3_1-4_24')		SED-C-68-2 (0-5_3')		SED-G-68-2 (4_24-5_3')		SED-C-67-2 (0-3_5')		SED-G-67-2 (2_8-3_5')		Trip Blank - 8	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Dichlorodifluoromethane	mg/kg	0.0289	U	---	---	0.0203	U	---	---	0.0573	U	---	---	0.0298	U	0.01	U
Diethyl Ether	mg/kg	0.0162	-	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0177	-	0.005	U
Di-isopropyl ether	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Ethyl tertiary-butyl ether	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Ethylbenzene	mg/kg	0.0367	-	---	---	0.0102	U	---	---	0.118	-	---	---	0.0277	-	0.005	U
Hexachlorobutadiene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Isopropylbenzene	mg/kg	0.0405	-	---	---	0.0102	U	---	---	0.0829	-	---	---	0.0394	-	0.005	U
Methyl tert-Butyl Ether	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Methylene Chloride	mg/kg	0.0289	U	---	---	0.0203	U	---	---	0.0573	U	---	---	0.0298	U	0.01	U
Naphthalene	mg/kg	0.0192	-	---	---	0.0102	U	---	---	0.856	-	---	---	0.0149	U	0.005	U
n-Butylbenzene	mg/kg	0.0425	-	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0769	-	0.005	U
n-Propylbenzene	mg/kg	0.0645	-	---	---	0.0102	U	---	---	0.134	-	---	---	0.0622	-	0.005	U
sec-Butylbenzene	mg/kg	0.0175	-	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0308	-	0.005	U
Styrene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
tert-Butylbenzene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Tertiary-amyl methyl ether	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Tetrachloroethene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Tetrahydrofuran	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Toluene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.119	-	---	---	0.0149	U	0.005	U
trans-1,2-Dichloroethene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
trans-1,3-Dichloropropene	mg/kg	**0.0145**	U	---	---	**0.0102**	U	---	---	**0.0286**	U	---	---	**0.0149**	U	0.005	U
Trichloroethene	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0999	-	---	---	0.0149	U	0.005	U
Trichlorofluoromethane	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.0286	U	---	---	0.0149	U	0.005	U
Vinyl Chloride	mg/kg	0.0289	U	---	---	0.0203	U	---	---	0.0573	U	---	---	0.0298	U	0.01	U
Xylene O	mg/kg	0.0145	U	---	---	0.0102	U	---	---	0.187	-	---	---	0.0149	U	0.005	U
Xylene P,M	mg/kg	0.0289	U	---	---	0.0203	U	---	---	0.273	-	---	---	0.0298	U	0.01	U
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0075	U
VOCs																	
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	3.35	-	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	**10.4**	U	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	3.10	-	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---

Laboratory Sample Designation		1709676-10		1709676-11		1709676-12		1709676-13		1709676-14		1709676-15		1709676-16		1709676-17	
Sample Designation		SED-G-65-2 (2_8-3_5')		SED-C-66-2 (0-5_3')		SED-G-66-2 (3_1-4_24')		SED-C-68-2 (0-5_3')		SED-G-68-2 (4_24-5_3')		SED-C-67-2 (0-3_5')		SED-G-67-2 (2_8-3_5')		Trip Blank - 8	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	**416**	U	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	**10.4**	U	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	10.4	U	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	**10.4**	U	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	**12.1**	-	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	3.41	-	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	**4.16**	U	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	**7.20**	-	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	10.4	U	---	---	---	---	---	---

Laboratory Sample Designation		1709676-10		1709676-11		1709676-12		1709676-13		1709676-14		1709676-15		1709676-16		1709676-17	
Sample Designation		SED-G-65-2 (2_8-3_5')		SED-C-66-2 (0-5_3')		SED-G-66-2 (3_1-4_24')		SED-C-68-2 (0-5_3')		SED-G-68-2 (4_24-5_3')		SED-C-67-2 (0-3_5')		SED-G-67-2 (2_8-3_5')		Trip Blank - 8	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Toluene	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	**2.08**	U	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	2.08	U	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	4.16	U	---	---	---	---	---	---
SVOCs																	
1,2,4-Trichlorobenzene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	1.45	U	---	---	1.96	U	---	---	1.46	U	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
2-Chlorophenol	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
2-Methylphenol	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
2-Nitrophenol	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	1.45	U	---	---	2.59	-	---	---	1.46	U	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
4-Chloroaniline	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
4-Nitrophenol	mg/kg	---	---	3.62	U	---	---	4.9	U	---	---	3.65	U	---	---	---	---
Acenaphthene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Acenaphthylene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Acetophenone	mg/kg	---	---	1.45	U	---	---	1.96	U	---	---	1.46	U	---	---	---	---
Aniline	mg/kg	---	---	3.62	U	---	---	4.9	U	---	---	3.65	U	---	---	---	---
Anthracene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Azobenzene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	0.525	-	---	---	0.49	U	---	---	0.534	-	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	45.3	D	---	---	**370**	D	---	---	**101**	D	---	---	---	---

Laboratory Sample Designation		1709676-10		1709676-11		1709676-12		1709676-13		1709676-14		1709676-15		1709676-16		1709676-17	
Sample Designation		SED-G-65-2 (2_8-3_5')		SED-C-66-2 (0-5_3')		SED-G-66-2 (3_1-4_24')		SED-C-68-2 (0-5_3')		SED-G-68-2 (4_24-5_3')		SED-C-67-2 (0-3_5')		SED-G-67-2 (2_8-3_5')		Trip Blank - 8	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Butylbenzylphthalate	mg/kg	---	---	0.722	U	---	---	1.89	-	---	---	0.727	U	---	---	---	---
Chrysene	mg/kg	---	---	0.603	-	---	---	0.49	U	---	---	0.581	-	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
Dibenzofuran	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Diethylphthalate	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Dimethylphthalate	mg/kg	---	---	**0.722**	U	---	---	**0.976**	U	---	---	**0.727**	U	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	0.722	U	---	---	78.4	D	---	---	5.36	-	---	---	---	---
Fluoranthene	mg/kg	---	---	0.923	-	---	---	0.976	U	---	---	0.989	-	---	---	---	---
Fluorene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Hexachloroethane	mg/kg	---	---	0.362	U	---	---	0.49	U	---	---	0.365	U	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Isophorone	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Naphthalene	mg/kg	---	---	0.722	U	---	---	1.64	-	---	---	0.727	U	---	---	---	---
Nitrobenzene	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Pentachlorophenol	mg/kg	---	---	1.45	U	---	---	1.96	U	---	---	1.46	U	---	---	---	---
Phenanthrene	mg/kg	---	---	0.780	-	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Phenol	mg/kg	---	---	0.722	U	---	---	0.976	U	---	---	0.727	U	---	---	---	---
Pyrene	mg/kg	---	---	1.31	-	---	---	0.976	U	---	---	1.20	-	---	---	---	---
Pyridine	mg/kg	---	---	3.62	U	---	---	4.9	U	---	---	3.65	U	---	---	---	---
Total Metals																	
Arsenic	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides																	
4,4´-DDD	mg/kg	---	---	0.0055	U	---	---	0.0151	-	---	---	0.0055	U	---	---	---	---
4,4´-DDE	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
4,4´-DDT	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Aldrin	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
alpha-BHC	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
alpha-Chlordane	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
beta-BHC	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Chlordane (Total)	mg/kg	---	---	0.044	U	---	---	0.0584	U	---	---	0.044	U	---	---	---	---
delta-BHC	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Dieldrin	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Endosulfan I	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---

Laboratory Sample Designation		1709676-10		1709676-11		1709676-12		1709676-13		1709676-14		1709676-15		1709676-16		1709676-17	
Sample Designation		SED-G-65-2 (2_8-3_5')		SED-C-66-2 (0-5_3')		SED-G-66-2 (3_1-4_24')		SED-C-68-2 (0-5_3')		SED-G-68-2 (4_24-5_3')		SED-C-67-2 (0-3_5')		SED-G-67-2 (2_8-3_5')		Trip Blank - 8	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Endosulfan II	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Endrin	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Endrin Ketone	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	0.0022	U	---	---	0.0029	U	---	---	0.0022	U	---	---	---	---
gamma-Chlordane	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Heptachlor	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Methoxychlor	mg/kg	---	---	0.0055	U	---	---	0.0073	U	---	---	0.0055	U	---	---	---	---
Toxaphene	mg/kg	---	---	0.275	U	---	---	0.365	U	---	---	0.275	U	---	---	---	---
PCBs																	
Aroclor 1016	mg/kg	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	---	---
Aroclor 1221	mg/kg	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	---	---
Aroclor 1232	mg/kg	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	---	---
Aroclor 1242	mg/kg	---	---	0.5	-	---	---	**1.1**	D	---	---	0.5	-	---	---	---	---
Aroclor 1248	mg/kg	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	---	---
Aroclor 1254	mg/kg	---	---	**1.7**	-	---	---	**3.4**	D	---	---	**1.5**	-	---	---	---	---
Aroclor 1260	mg/kg	---	---	0.6	-	---	---	1.0	D	---	---	0.6	-	---	---	---	---
Aroclor 1262	mg/kg	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	---	---
Aroclor 1268	mg/kg	---	---	0.1	U	---	---	0.2	U	---	---	0.1	U	---	---	---	---
Herbicides																	
2,4,5-T	mg/kg	---	---	0.202	U, D	---	---	0.246	U, D	---	---	0.197	U, D	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	0.202	U, D	---	---	0.493	LC, P, D	---	---	0.197	U, D	---	---	---	---
2,4-D	mg/kg	---	---	1	U, D	---	---	1.22	U, D	---	---	0.975	U, D	---	---	---	---
2,4-DB	mg/kg	---	---	1.01	U, D	---	---	1.23	U, D	---	---	0.985	U, D	---	---	---	---
Dalapon	mg/kg	---	---	0.968	U, D	---	---	1.18	U, D	---	---	0.944	U, D	---	---	---	---
Dicamba	mg/kg	---	---	0.2	U, D	---	---	0.244	U, D	---	---	0.374	LC, P, D	---	---	---	---
Dichlorprop	mg/kg	---	---	1	U, D	---	---	1.22	U, D	---	---	0.975	U, D	---	---	---	---
Dinoseb	mg/kg	---	---	1.01	U, D	---	---	1.23	U, D	---	---	0.985	U, D	---	---	---	---
MCPA	mg/kg	---	---	49.5	#	---	---	60.3	#	---	---	48.2	#	---	---	---	---
MCPP	mg/kg	---	---	50.0	#	---	---	61.0	#	---	---	48.7	#	---	---	---	---
Classical Chemistry																	
Corrosivity (pH)	S.U.	---	---	7.35	-	---	---	5.29	-	---	---	7.53	-	---	---	---	---
Flashpoint	°F	---	---	200	>	---	---	200	>	---	---	200	>	---	---	---	---
Percent Moisture	%	---	---	56	-	---	---	67	-	---	---	55	-	---	---	---	---
Reactive Cyanide	mg/kg	---	---	2	U	---	---	2	U	---	---	2	U	---	---	---	---
Reactive Sulfide	mg/kg	---	---	26.2	-	---	---	334	-	---	---	2	U	---	---	---	---
TCLP Metals																	
Arsenic	mg/L	---	---	0.071	-	---	---	0.05	U	---	---	0.064	-	---	---	---	---
Barium	mg/L	---	---	0.103	-	---	---	0.05	U	---	---	0.131	-	---	---	---	---
Cadmium	mg/L	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	---	---

Laboratory Sample Designation		1709676-10		1709676-11		1709676-12		1709676-13		1709676-14		1709676-15		1709676-16		1709676-17	
Sample Designation		SED-G-65-2 (2_8-3_5')		SED-C-66-2 (0-5_3')		SED-G-66-2 (3_1-4_24')		SED-C-68-2 (0-5_3')		SED-G-68-2 (4_24-5_3')		SED-C-67-2 (0-3_5')		SED-G-67-2 (2_8-3_5')		Trip Blank - 8	
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017	
Sample Depth																	
Soil Type																	
Group Designation																	
Chromium	mg/L	---	---	0.02	U	---	---	0.02	U	---	---	0.02	U	---	---	---	---
Lead	mg/L	---	---	0.05	U	---	---	0.05	U	---	---	0.05	U	---	---	---	---
Mercury	mg/L	---	---	0.0005	U	---	---	0.0005	U	---	---	0.0005	U	---	---	---	---
Selenium	mg/L	---	---	0.1	U	---	---	0.1	U	---	---	0.1	U	---	---	---	---
Silver	mg/L	---	---	0.01	U	---	---	0.01	U	---	---	0.01	U	---	---	---	---

Laboratory Sample Designation		1709676-18		1709676-19		1709676-20		1709676-21		1709676-22		1709676-23		1709676
Sample Designation		SED-C-70-2 (0-1_0') Dried		SED-C-69-2 (0-4_0') Dried		SED-C-71-2 (0-1_9') Dried		SED-C-DUP-4 Dried		SED-C-65-2 (0-3_5') Dried		SED-C-66-2 (0-5_3') Dried		SED-C-68-2 (
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22
Sample Depth														
Soil Type														
Group Designation														
VOCs - Low														
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709676-18		1709676-19		1709676-20		1709676-21		1709676-22		1709676-23		1709676
Sample Designation		SED-C-70-2 (0-1_0') Dried		SED-C-69-2 (0-4_0') Dried		SED-C-71-2 (0-1_9') Dried		SED-C-DUP-4 Dried		SED-C-65-2 (0-3_5') Dried		SED-C-66-2 (0-5_3') Dried		SED-C-68-2 (
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22
Sample Depth														
Soil Type														
Group Designation														
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylenes (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
VOCs														
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709676-18		1709676-19		1709676-20		1709676-21		1709676-22		1709676-23		1709676
Sample Designation		SED-C-70-2 (0-1_0') Dried		SED-C-69-2 (0-4_0') Dried		SED-C-71-2 (0-1_9') Dried		SED-C-DUP-4 Dried		SED-C-65-2 (0-3_5') Dried		SED-C-66-2 (0-5_3') Dried		SED-C-68-2 (
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22
Sample Depth														
Soil Type														
Group Designation														
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Butanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chlorotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromoform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibromomethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-isopropyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Isopropylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
n-Propylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
sec-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
tert-Butylbenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrahydrofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709676-18		1709676-19		1709676-20		1709676-21		1709676-22		1709676-23		1709676
Sample Designation		SED-C-70-2 (0-1_0') Dried		SED-C-69-2 (0-4_0') Dried		SED-C-71-2 (0-1_9') Dried		SED-C-DUP-4 Dried		SED-C-65-2 (0-3_5') Dried		SED-C-66-2 (0-5_3') Dried		SED-C-68-2 (
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22
Sample Depth														
Soil Type														
Group Designation														
Toluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene O	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Xylene P,M	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
SVOCs														
1,2,4-Trichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
3+4-Methylphenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4-Nitrophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Acetophenone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aniline	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Azobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709676-18		1709676-19		1709676-20		1709676-21		1709676-22		1709676-23		1709676
Sample Designation		SED-C-70-2 (0-1_0') Dried		SED-C-69-2 (0-4_0') Dried		SED-C-71-2 (0-1_9') Dried		SED-C-DUP-4 Dried		SED-C-65-2 (0-3_5') Dried		SED-C-66-2 (0-5_3') Dried		SED-C-68-2 (
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22
Sample Depth														
Soil Type														
Group Designation														
Butylbenzylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Diethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dimethylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Isophorone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Pyridine	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Metals														
Arsenic	mg/kg	**203**	-	**188**	-	**72.5**	-	**70.9**	-	**365**	-	**207**	-	**562**
Barium	mg/kg	77.9	-	70.8	-	23.6	-	22.8	-	64.7	-	82.7	-	94.2
Cadmium	mg/kg	0.44	U	1.91	-	0.5	U	0.46	U	1.48	-	3.04	-	5.89
Chromium	mg/kg	16.9	-	82.3	-	23.2	-	23.2	-	74.8	-	93.3	-	**196**
Lead	mg/kg	**810**	-	**393**	-	132	-	178	-	**359**	-	**525**	-	**849**
Mercury	mg/kg	3.76	D	1.91	D	1.40	D	3.17	D	1.90	D	1.96	D	3.69
Selenium	mg/kg	17.5	EL, U, D	18.6	EL, U, D	19.9	EL, U, D	18.5	EL, U, D	18.7	EL, U, D	18	EL, U, D	19.3
Silver	mg/kg	0.95	-	1.77	-	0.5	U	0.46	U	1.64	-	2.38	-	3.77
Pesticides														
4,4´-DDD	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDE	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
4,4´-DDT	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
alpha-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
beta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane (Total)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
delta-BHC	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709676-18		1709676-19		1709676-20		1709676-21		1709676-22		1709676-23		1709676
Sample Designation		SED-C-70-2 (0-1_0') Dried		SED-C-69-2 (0-4_0') Dried		SED-C-71-2 (0-1_9') Dried		SED-C-DUP-4 Dried		SED-C-65-2 (0-3_5') Dried		SED-C-66-2 (0-5_3') Dried		SED-C-68-2 (
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22
Sample Depth														
Soil Type														
Group Designation														
Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Endrin Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
gamma-Chlordane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Toxaphene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
PCBs														
Aroclor 1016	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1221	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1232	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1242	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1248	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1254	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1260	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1262	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Aroclor 1268	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Herbicides														
2,4,5-T	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-D	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
2,4-DB	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dalapon	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dicamba	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dichlorprop	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Dinoseb	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPA	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
MCPP	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Classical Chemistry														
Corrosivity (pH)	S.U.	---	---	---	---	---	---	---	---	---	---	---	---	---
Flashpoint	°F	---	---	---	---	---	---	---	---	---	---	---	---	---
Percent Moisture	%	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
Reactive Sulfide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---
TCLP Metals														
Arsenic	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		1709676-18		1709676-19		1709676-20		1709676-21		1709676-22		1709676-23		1709€
Sample Designation		SED-C-70-2 (0-1_0') Dried		SED-C-69-2 (0-4_0') Dried		SED-C-71-2 (0-1_9') Dried		SED-C-DUP-4 Dried		SED-C-65-2 (0-3_5') Dried		SED-C-66-2 (0-5_3') Dried		SED-C-68-2 (
Sample Date		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22/2017		09/22
Sample Depth														
Soil Type														
Group Designation														
Chromium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---

Laboratory Sample Designation		;76-24	1709676-25	
Sample Designation		0-5_3') Dried	SED-C-67-2 (0-3_5') Dried	
Sample Date		/2017	09/22/2017	
Sample Depth				
Soil Type				
Group Designation				
VOCs - Low				
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---
1,4-Dioxane	mg/kg	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---
2-Butanone	mg/kg	---	---	---
2-Chlorotoluene	mg/kg	---	---	---
2-Hexanone	mg/kg	---	---	---
4-Chlorotoluene	mg/kg	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---
Acetone	mg/kg	---	---	---
Benzene	mg/kg	---	---	---
Bromobenzene	mg/kg	---	---	---
Bromochloromethane	mg/kg	---	---	---
Bromodichloromethane	mg/kg	---	---	---
Bromoform	mg/kg	---	---	---
Bromomethane	mg/kg	---	---	---
Carbon Disulfide	mg/kg	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---
Chlorobenzene	mg/kg	---	---	---
Chloroethane	mg/kg	---	---	---
Chloroform	mg/kg	---	---	---
Chloromethane	mg/kg	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---
Dibromochloromethane	mg/kg	---	---	---
Dibromomethane	mg/kg	---	---	---

Laboratory Sample Designation		;76-24	1709676-25	
Sample Designation		0-5_3') Dried	SED-C-67-2 (0-3_5') Dried	
Sample Date		/2017	09/22/2017	
Sample Depth				
Soil Type				
Group Designation				
Dichlorodifluoromethane	mg/kg	---	---	---
Diethyl Ether	mg/kg	---	---	---
Di-isopropyl ether	mg/kg	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---
Ethylbenzene	mg/kg	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---
Isopropylbenzene	mg/kg	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---
Methylene Chloride	mg/kg	---	---	---
Naphthalene	mg/kg	---	---	---
n-Butylbenzene	mg/kg	---	---	---
n-Propylbenzene	mg/kg	---	---	---
sec-Butylbenzene	mg/kg	---	---	---
Styrene	mg/kg	---	---	---
tert-Butylbenzene	mg/kg	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---
Tetrachloroethene	mg/kg	---	---	---
Tetrahydrofuran	mg/kg	---	---	---
Toluene	mg/kg	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---
Trichloroethene	mg/kg	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---
Vinyl Chloride	mg/kg	---	---	---
Xylene O	mg/kg	---	---	---
Xylene P,M	mg/kg	---	---	---
Xylenes (Total)	mg/kg	---	---	---
VOCs				
1,1,1,2-Tetrachloroethane	mg/kg	---	---	---
1,1,1-Trichloroethane	mg/kg	---	---	---
1,1,2,2-Tetrachloroethane	mg/kg	---	---	---
1,1,2-Trichloroethane	mg/kg	---	---	---
1,1-Dichloroethane	mg/kg	---	---	---
1,1-Dichloroethene	mg/kg	---	---	---
1,1-Dichloropropene	mg/kg	---	---	---
1,2,3-Trichlorobenzene	mg/kg	---	---	---
1,2,3-Trichloropropane	mg/kg	---	---	---
1,2,4-Trichlorobenzene	mg/kg	---	---	---
1,2,4-Trimethylbenzene	mg/kg	---	---	---
1,2-Dibromo-3-Chloropropane	mg/kg	---	---	---
1,2-Dibromoethane	mg/kg	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---
1,2-Dichloroethane	mg/kg	---	---	---
1,2-Dichloropropane	mg/kg	---	---	---
1,3,5-Trimethylbenzene	mg/kg	---	---	---

Laboratory Sample Designation		;76-24	1709676-25	
Sample Designation		0-5_3') Dried	SED-C-67-2 (0-3_5') Dried	
Sample Date		/2017	09/22/2017	
Sample Depth				
Soil Type				
Group Designation				
1,3-Dichlorobenzene	mg/kg	---	---	---
1,3-Dichloropropane	mg/kg	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---
1,4-Dioxane - Screen	mg/kg	---	---	---
2,2-Dichloropropane	mg/kg	---	---	---
2-Butanone	mg/kg	---	---	---
2-Chlorotoluene	mg/kg	---	---	---
2-Hexanone	mg/kg	---	---	---
4-Chlorotoluene	mg/kg	---	---	---
4-Isopropyltoluene	mg/kg	---	---	---
4-Methyl-2-Pentanone	mg/kg	---	---	---
Acetone	mg/kg	---	---	---
Benzene	mg/kg	---	---	---
Bromobenzene	mg/kg	---	---	---
Bromochloromethane	mg/kg	---	---	---
Bromodichloromethane	mg/kg	---	---	---
Bromoform	mg/kg	---	---	---
Bromomethane	mg/kg	---	---	---
Carbon Disulfide	mg/kg	---	---	---
Carbon Tetrachloride	mg/kg	---	---	---
Chlorobenzene	mg/kg	---	---	---
Chloroethane	mg/kg	---	---	---
Chloroform	mg/kg	---	---	---
Chloromethane	mg/kg	---	---	---
cis-1,2-Dichloroethene	mg/kg	---	---	---
cis-1,3-Dichloropropene	mg/kg	---	---	---
Dibromochloromethane	mg/kg	---	---	---
Dibromomethane	mg/kg	---	---	---
Dichlorodifluoromethane	mg/kg	---	---	---
Diethyl Ether	mg/kg	---	---	---
Di-isopropyl ether	mg/kg	---	---	---
Ethyl tertiary-butyl ether	mg/kg	---	---	---
Ethylbenzene	mg/kg	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---
Isopropylbenzene	mg/kg	---	---	---
Methyl tert-Butyl Ether	mg/kg	---	---	---
Methylene Chloride	mg/kg	---	---	---
Naphthalene	mg/kg	---	---	---
n-Butylbenzene	mg/kg	---	---	---
n-Propylbenzene	mg/kg	---	---	---
sec-Butylbenzene	mg/kg	---	---	---
Styrene	mg/kg	---	---	---
tert-Butylbenzene	mg/kg	---	---	---
Tertiary-amyl methyl ether	mg/kg	---	---	---
Tetrachloroethene	mg/kg	---	---	---
Tetrahydrofuran	mg/kg	---	---	---

Laboratory Sample Designation		;76-24	1709676-25	
Sample Designation		0-5_3') Dried	SED-C-67-2 (0-3_5') Dried	
Sample Date		/2017	09/22/2017	
Sample Depth				
Soil Type				
Group Designation				
Toluene	mg/kg	---	---	---
trans-1,2-Dichloroethene	mg/kg	---	---	---
trans-1,3-Dichloropropene	mg/kg	---	---	---
Trichloroethene	mg/kg	---	---	---
Trichlorofluoromethane	mg/kg	---	---	---
Vinyl Chloride	mg/kg	---	---	---
Xylene O	mg/kg	---	---	---
Xylene P,M	mg/kg	---	---	---
SVOCs				
1,2,4-Trichlorobenzene	mg/kg	---	---	---
1,2-Dichlorobenzene	mg/kg	---	---	---
1,3-Dichlorobenzene	mg/kg	---	---	---
1,4-Dichlorobenzene	mg/kg	---	---	---
2,4,5-Trichlorophenol	mg/kg	---	---	---
2,4,6-Trichlorophenol	mg/kg	---	---	---
2,4-Dichlorophenol	mg/kg	---	---	---
2,4-Dimethylphenol	mg/kg	---	---	---
2,4-Dinitrophenol	mg/kg	---	---	---
2,4-Dinitrotoluene	mg/kg	---	---	---
2,6-Dinitrotoluene	mg/kg	---	---	---
2-Chloronaphthalene	mg/kg	---	---	---
2-Chlorophenol	mg/kg	---	---	---
2-Methylnaphthalene	mg/kg	---	---	---
2-Methylphenol	mg/kg	---	---	---
2-Nitrophenol	mg/kg	---	---	---
3,3´-Dichlorobenzidine	mg/kg	---	---	---
3+4-Methylphenol	mg/kg	---	---	---
4-Bromophenyl-phenylether	mg/kg	---	---	---
4-Chloroaniline	mg/kg	---	---	---
4-Nitrophenol	mg/kg	---	---	---
Acenaphthene	mg/kg	---	---	---
Acenaphthylene	mg/kg	---	---	---
Acetophenone	mg/kg	---	---	---
Aniline	mg/kg	---	---	---
Anthracene	mg/kg	---	---	---
Azobenzene	mg/kg	---	---	---
Benzo(a)anthracene	mg/kg	---	---	---
Benzo(a)pyrene	mg/kg	---	---	---
Benzo(b)fluoranthene	mg/kg	---	---	---
Benzo(g,h,i)perylene	mg/kg	---	---	---
Benzo(k)fluoranthene	mg/kg	---	---	---
bis(2-Chloroethoxy)methane	mg/kg	---	---	---
bis(2-Chloroethyl)ether	mg/kg	---	---	---
bis(2-chloroisopropyl)Ether	mg/kg	---	---	---
bis(2-Ethylhexyl)phthalate	mg/kg	---	---	---

Laboratory Sample Designation		;76-24	1709676-25	
Sample Designation		0-5_3') Dried	SED-C-67-2 (0-3_5') Dried	
Sample Date		/2017	09/22/2017	
Sample Depth				
Soil Type				
Group Designation				
Butylbenzylphthalate	mg/kg	---	---	---
Chrysene	mg/kg	---	---	---
Dibenzo(a,h)Anthracene	mg/kg	---	---	---
Dibenzofuran	mg/kg	---	---	---
Diethylphthalate	mg/kg	---	---	---
Dimethylphthalate	mg/kg	---	---	---
Di-n-butylphthalate	mg/kg	---	---	---
Di-n-octylphthalate	mg/kg	---	---	---
Fluoranthene	mg/kg	---	---	---
Fluorene	mg/kg	---	---	---
Hexachlorobenzene	mg/kg	---	---	---
Hexachlorobutadiene	mg/kg	---	---	---
Hexachloroethane	mg/kg	---	---	---
Indeno(1,2,3-cd)Pyrene	mg/kg	---	---	---
Isophorone	mg/kg	---	---	---
Naphthalene	mg/kg	---	---	---
Nitrobenzene	mg/kg	---	---	---
N-Nitrosodimethylamine	mg/kg	---	---	---
Pentachlorophenol	mg/kg	---	---	---
Phenanthrene	mg/kg	---	---	---
Phenol	mg/kg	---	---	---
Pyrene	mg/kg	---	---	---
Pyridine	mg/kg	---	---	---
Total Metals				
Arsenic	mg/kg	-	**215**	-
Barium	mg/kg	-	80.4	-
Cadmium	mg/kg	-	1.64	-
Chromium	mg/kg	-	82.1	-
Lead	mg/kg	-	**335**	-
Mercury	mg/kg	D	1.08	D
Selenium	mg/kg	EL, U, D	18.9	EL, U, D
Silver	mg/kg	-	1.68	-
Pesticides				
4,4´-DDD	mg/kg	---	---	---
4,4´-DDE	mg/kg	---	---	---
4,4´-DDT	mg/kg	---	---	---
Aldrin	mg/kg	---	---	---
alpha-BHC	mg/kg	---	---	---
alpha-Chlordane	mg/kg	---	---	---
beta-BHC	mg/kg	---	---	---
Chlordane (Total)	mg/kg	---	---	---
delta-BHC	mg/kg	---	---	---
Dieldrin	mg/kg	---	---	---
Endosulfan I	mg/kg	---	---	---

Laboratory Sample Designation		;76-24	1709676-25	
Sample Designation		0-5_3') Dried	SED-C-67-2 (0-3_5') Dried	
Sample Date		/2017	09/22/2017	
Sample Depth				
Soil Type				
Group Designation				
Endosulfan II	mg/kg	---	---	---
Endosulfan Sulfate	mg/kg	---	---	---
Endrin	mg/kg	---	---	---
Endrin Ketone	mg/kg	---	---	---
gamma-BHC (Lindane)	mg/kg	---	---	---
gamma-Chlordane	mg/kg	---	---	---
Heptachlor	mg/kg	---	---	---
Heptachlor Epoxide	mg/kg	---	---	---
Hexachlorobenzene	mg/kg	---	---	---
Methoxychlor	mg/kg	---	---	---
Toxaphene	mg/kg	---	---	---
PCBs				
Aroclor 1016	mg/kg	---	---	---
Aroclor 1221	mg/kg	---	---	---
Aroclor 1232	mg/kg	---	---	---
Aroclor 1242	mg/kg	---	---	---
Aroclor 1248	mg/kg	---	---	---
Aroclor 1254	mg/kg	---	---	---
Aroclor 1260	mg/kg	---	---	---
Aroclor 1262	mg/kg	---	---	---
Aroclor 1268	mg/kg	---	---	---
Herbicides				
2,4,5-T	mg/kg	---	---	---
2,4,5-TP (Silvex)	mg/kg	---	---	---
2,4-D	mg/kg	---	---	---
2,4-DB	mg/kg	---	---	---
Dalapon	mg/kg	---	---	---
Dicamba	mg/kg	---	---	---
Dichlorprop	mg/kg	---	---	---
Dinoseb	mg/kg	---	---	---
MCPA	mg/kg	---	---	---
MCPP	mg/kg	---	---	---
Classical Chemistry				
Corrosivity (pH)	S.U.	---	---	---
Flashpoint	°F	---	---	---
Percent Moisture	%	---	---	---
Reactive Cyanide	mg/kg	---	---	---
Reactive Sulfide	mg/kg	---	---	---
TCLP Metals				
Arsenic	mg/L	---	---	---
Barium	mg/L	---	---	---
Cadmium	mg/L	---	---	---

Laboratory Sample Designation		;76-24	1709676-25	
Sample Designation		0-5_3') Dried	SED-C-67-2 (0-3_5') Dried	
Sample Date		/2017	09/22/2017	
Sample Depth				
Soil Type				
Group Designation				
Chromium	mg/L	---	---	---
Lead	mg/L	---	---	---
Mercury	mg/L	---	---	---
Selenium	mg/L	---	---	---
Silver	mg/L	---	---	---

Qualifier	Description
#	Modified result
<	Less than.
>	Greater than.
>=	Greater than or equal to
B	Present in Method Blank (B).
BOD	Initial setup for BOD yielded unacceptable results. The sample was replanted on [Custom Value] and these results are reported.
DW	Water layer was decanted from sample prior to analysis.
E	Reported above the quantitation limit; Estimated value (E).
EL	Elevated Method Reporting Limits due to sample matrix (EL).
H	Estimated value. Sample hold times were exceeded (H).
HT	The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.
J	Reported between MDL and MRL
J*	This analyte was evaluated down to the Limit of Detection (LOD).
L	Reported to the Method Detection Limit.
LC	Lower value is used due to matrix interferences (LC).
LS	Limited Sample did not allow for re-extraction.
NE	Not Evaluated
OPO4	Samples for Orthophosphate are required to be filtered within 15 minutes of sampling as stated in 40 CFR Part 136 Table II.
P	Percent difference between primary and confirmation results exceeds 40% (P).
PB	Presence of PCBs in the sample may cause this analyte to be biased high.
PC	Possible carryover
PH	Sample was received improperly preserved (PH).
PH-	pH <= 2
PH+	pH > 2 (PH+)
PP	This sample showed multiple peaks present with no discernable PCB Aroclor pattern. PCB congeners may be present.
PP-	This analyte is a poor performer for this method
R	Eh-pH data demonstrates reducing conditions.
RW	Reduced weight used for TCLP/SPLP Extraction.
SUB	Subcontracted analysis; see attached report
TCN	Based on non-detect result for Total Cyanide, Amenable Cyanide would also be non-detect. Total Cyanide is reported.
TOT	In review of the total results obtained on this sample, the TCLP target analytes were either ND above the MRL or not present in a concentration such that the sample would generate TCLP extract concentrations above the TCLP MRL. TCLP was not performed.
V	Estimated value.
WL	Results obtained from a deionized water leach of the sample.
U	Undetected
D	Diluted

APPENDIX I

Laboratory Test Results of Cap Material

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1711199

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:16 pm, Nov 20, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses

CTS - Cranston, RI	Grain Size Analysis, Soil Classification, Water Content
Pace Analytical - Minneapolis, MN	Dioxin

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

SAMPLE RECEIPT

The following samples were received on November 08, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Low Level VOA vials were frozen by ESS Laboratory on November 8, 2017 at 14:19.

Lab Number	Sample Name	Matrix	Analysis
1711199-01	Type A Capping Sand	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711199-02	Type C Capping Sand	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711199-03	Trip Blank	Solid	8260B Low

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

C7K0160-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
1,2-Dichloroethane (21% @ 20%), Bromomethane (28% @ 20%)

8081B Organochlorine Pesticides

C7K0147-CCV5 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4,4´-DDT (22% @ 20%)

8151A Chlorinated Herbicides

1711199-02 **Modified result**
MCPP , MCPP [2C]

1711199-02 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

C7K0198-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4,5-T [2C] (22% @ 15%), 2,4,5-TP (Silvex) [2C] (18% @ 15%), Dicamba [2C] (18% @ 15%), Dichlorprop [2C] (19% @ 15%), Dinoseb [2C] (19% @ 15%)

CK70954-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Dinoseb (36% @ 30%)

8270D Semi-Volatile Organic Compounds

C7K0149-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (86% @ 80-120%)

C7K0149-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2-Fluorophenol (21% @ 20%)

C7K0149-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
p-Terphenyl-d14 (25% @ 20%)

C7K0168-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (79% @ 80-120%)

C7K0168-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2-Fluorophenol (22% @ 20%), Di-n-octylphthalate (30% @ 20%)

C7K0168-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (21% @ 20%)

CK70910-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
2-Methylphenol (48% @ 30%)

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711199

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711199-01 through 1711199-03**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

(X) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	(X) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	( ) MassDEP EPH CAM IV B	(X) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for '"Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes (X) No ( )*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: November 20, 2017

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	FV	Batch
Dioxin	**See Attached** (N/A)									

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.48)		6020A		20	NAR	11/13/17 22:43	2.15	100	CK71043
Arsenic	ND (2.38)		6010C		1	KJK	11/13/17 16:27	2.15	100	CK71043
Barium	**2.85** (2.38)		6010C		1	KJK	11/13/17 16:27	2.15	100	CK71043
Beryllium	**0.43** (0.10)		6010C		1	KJK	11/14/17 11:47	2.15	100	CK71043
Cadmium	ND (0.48)		6010C		1	KJK	11/13/17 16:27	2.15	100	CK71043
Chromium	**1.03** (0.95)		6010C		1	KJK	11/13/17 16:27	2.15	100	CK71043
Lead	**6.52** (4.77)		6010C		1	KJK	11/13/17 16:27	2.15	100	CK71043
Mercury	ND (0.032)		7471B		1	MJV	11/14/17 12:47	0.64	40	CK71044
Nickel	ND (2.38)		6010C		1	KJK	11/13/17 16:27	2.15	100	CK71043
Selenium	ND (0.48)		6020A		20	NAR	11/13/17 22:43	2.15	100	CK71043
Silver	ND (0.48)		6010C		1	KJK	11/13/17 16:27	2.15	100	CK71043
Thallium	ND (0.48)		6020A		20	NAR	11/13/17 22:43	2.15	100	CK71043
Vanadium	ND (0.95)		6010C		1	KJK	11/13/17 16:27	2.15	100	CK71043
Zinc	**5.02** (2.38)		6010C		1	KJK	11/13/17 16:27	2.15	100	CK71043

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
1,4-Dioxane	ND (0.101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
2-Butanone	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
2-Chlorotoluene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
2-Hexanone	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
4-Chlorotoluene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
4-Methyl-2-Pentanone	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Acetone	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Benzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Bromobenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Bromochloromethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Bromoform	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Bromomethane	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Carbon Disulfide	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Chlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Chloroethane	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Chloroform	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Chloromethane	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Dibromochloromethane	ND (0.0020)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Dibromomethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Dichlorodifluoromethane	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Diethyl Ether	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Di-isopropyl ether	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Ethylbenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Isopropylbenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Methylene Chloride	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Naphthalene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
n-Butylbenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
n-Propylbenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
sec-Butylbenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Styrene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
tert-Butylbenzene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Tetrachloroethene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Tetrahydrofuran	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Toluene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Trichloroethene	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Vinyl Chloride	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Xylene O	ND (0.0050)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Xylene P,M	ND (0.0101)		8260B Low		1	11/09/17 19:50	C7K0160	CK70919
Xylenes (Total)	ND (0.0101)		8260B Low		1	11/09/17 19:50		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*97 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*93 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 19.8
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 11/9/17 16:30

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
4,4´-DDE	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
4,4´-DDT	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Aldrin	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
alpha-BHC	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
alpha-Chlordane	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
beta-BHC	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Chlordane (Total)	ND (0.0207)		8081B		1	11/10/17 13:37	C7K0147	CK70909
delta-BHC	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Dieldrin	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Endosulfan I	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Endosulfan II	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Endosulfan Sulfate	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Endrin	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Endrin Ketone	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	11/10/17 13:37	C7K0147	CK70909
gamma-Chlordane	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Heptachlor	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Heptachlor Epoxide	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Hexachlorobenzene	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909
Methoxychlor	ND (0.0026)		8081B		1	11/10/17 13:37	C7K0147	CK70909

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*67 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*92 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/9/17 15:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/10/17 12:41		CK70821
Aroclor 1221	ND (0.05)		8082A		1	11/10/17 12:41		CK70821
Aroclor 1232	ND (0.05)		8082A		1	11/10/17 12:41		CK70821
Aroclor 1242	ND (0.05)		8082A		1	11/10/17 12:41		CK70821
Aroclor 1248	ND (0.05)		8082A		1	11/10/17 12:41		CK70821
Aroclor 1254	ND (0.05)		8082A		1	11/10/17 12:41		CK70821
Aroclor 1260	ND (0.05)		8082A		1	11/10/17 12:41		CK70821
Aroclor 1262	ND (0.05)		8082A		1	11/10/17 12:41		CK70821
Aroclor 1268	ND (0.05)		8082A		1	11/10/17 12:41		CK70821

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*88 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*96 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*89 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 11/9/17 20:50

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.009)		8151A		1	11/13/17 20:10	C7K0198	CK70954
2,4,5-TP (Silvex)	ND (0.009)		8151A		1	11/13/17 20:10	C7K0198	CK70954
2,4-D	ND (0.047)		8151A		1	11/13/17 20:10	C7K0198	CK70954
2,4-DB	ND (0.047)		8151A		1	11/13/17 20:10	C7K0198	CK70954
Dalapon	ND (0.045)		8151A		1	11/13/17 20:10	C7K0198	CK70954
Dicamba	ND (0.009)		8151A		1	11/13/17 20:10	C7K0198	CK70954
Dichlorprop	ND (0.047)		8151A		1	11/13/17 20:10	C7K0198	CK70954
Dinoseb	ND (0.047)		8151A		1	11/13/17 20:10	C7K0198	CK70954
MCPA	ND (2.31)		8151A		1	11/13/17 20:10	C7K0198	CK70954
MCPP [2C]	ND (2.34)		8151A		1	11/13/17 20:10	C7K0198	CK70954

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*75 %*		*30-150*
Surrogate: DCAA [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
1,2-Dichlorobenzene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
1,3-Dichlorobenzene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
1,4-Dichlorobenzene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2,4,5-Trichlorophenol	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2,4,6-Trichlorophenol	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2,4-Dichlorophenol	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2,4-Dimethylphenol	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2,4-Dinitrophenol	ND (1.76)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2,4-Dinitrotoluene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2,6-Dinitrotoluene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2-Chloronaphthalene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2-Chlorophenol	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2-Methylnaphthalene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2-Methylphenol	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
2-Nitrophenol	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
3,3′-Dichlorobenzidine	ND (0.703)		8270D		1	11/09/17 20:58	C7K0149	CK70910
3+4-Methylphenol	ND (0.703)		8270D		1	11/09/17 20:58	C7K0149	CK70910
4-Bromophenyl-phenylether	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
4-Chloroaniline	ND (0.703)		8270D		1	11/09/17 20:58	C7K0149	CK70910
4-Nitrophenol	ND (1.76)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Acenaphthene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Acenaphthylene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Acetophenone	ND (0.703)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Aniline	ND (1.76)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Anthracene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Azobenzene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Benzo(a)anthracene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Benzo(a)pyrene	ND (0.176)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Benzo(b)fluoranthene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Benzo(g,h,i)perylene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Benzo(k)fluoranthene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
bis(2-Chloroethyl)ether	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
bis(2-chloroisopropyl)Ether	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
bis(2-Ethylhexyl)phthalate	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Butylbenzylphthalate	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Chrysene	ND (0.176)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Dibenzo(a,h)Anthracene	ND (0.176)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Dibenzofuran	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Diethylphthalate	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Dimethylphthalate	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Di-n-butylphthalate	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Di-n-octylphthalate	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Fluoranthene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Fluorene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Hexachlorobenzene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Hexachlorobutadiene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Hexachloroethane	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Indeno(1,2,3-cd)Pyrene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Isophorone	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Naphthalene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Nitrobenzene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
N-Nitrosodimethylamine	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Pentachlorophenol	ND (1.76)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Phenanthrene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Phenol	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910
Pyrene	ND (0.351)		8270D		1	11/09/17 20:58	C7K0149	CK70910

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*77 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*81 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*81 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*89 %*		*30-130*
Surrogate: 2-Fluorophenol	*91 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Nitrobenzene-d5		*79 %*		*30-130*				
Surrogate: Phenol-d6		*84 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*86 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	**819** (332)		9060		1	DEL	11/14/17 23:10	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	FV	Batch
Dioxin	**See Attached** (N/A)									

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.43)		6020A		20	NAR	11/13/17 22:49	2.61	100	CK71043
Arsenic	**9.95** (2.15)		6010C		1	KJK	11/13/17 16:31	2.61	100	CK71043
Barium	**19.5** (2.15)		6010C		1	KJK	11/13/17 16:31	2.61	100	CK71043
Beryllium	**0.44** (0.09)		6010C		1	KJK	11/14/17 11:51	2.61	100	CK71043
Cadmium	ND (0.43)		6010C		1	KJK	11/13/17 16:31	2.61	100	CK71043
Chromium	**54.2** (0.86)		6010C		1	KJK	11/13/17 16:31	2.61	100	CK71043
Lead	**19.7** (4.30)		6010C		1	KJK	11/13/17 16:31	2.61	100	CK71043
Mercury	ND (0.029)		7471B		1	MJV	11/14/17 12:49	0.76	40	CK71044
Nickel	**24.1** (2.15)		6010C		1	KJK	11/13/17 16:31	2.61	100	CK71043
Selenium	ND (0.43)		6020A		20	NAR	11/13/17 22:49	2.61	100	CK71043
Silver	ND (0.43)		6010C		1	KJK	11/13/17 16:31	2.61	100	CK71043
Thallium	ND (0.43)		6020A		20	NAR	11/13/17 22:49	2.61	100	CK71043
Vanadium	**17.5** (0.86)		6010C		1	KJK	11/13/17 16:31	2.61	100	CK71043
Zinc	**29.9** (2.15)		6010C		1	KJK	11/13/17 16:31	2.61	100	CK71043

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,1,1-Trichloroethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,1,2,2-Tetrachloroethane	ND (0.0019)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,1,2-Trichloroethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,1-Dichloroethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,1-Dichloroethene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,1-Dichloropropene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,2,3-Trichlorobenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,2,3-Trichloropropane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,2,4-Trichlorobenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,2,4-Trimethylbenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,2-Dibromo-3-Chloropropane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,2-Dibromoethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,2-Dichlorobenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,2-Dichloroethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,2-Dichloropropane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,3,5-Trimethylbenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,3-Dichlorobenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,3-Dichloropropane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,4-Dichlorobenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
1,4-Dioxane	ND (0.0951)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
2,2-Dichloropropane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
2-Butanone	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
2-Chlorotoluene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
2-Hexanone	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
4-Chlorotoluene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
4-Isopropyltoluene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
4-Methyl-2-Pentanone	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Acetone	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Benzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Bromobenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Bromochloromethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Bromoform	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Bromomethane	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Carbon Disulfide	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Carbon Tetrachloride	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Chlorobenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Chloroethane	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Chloroform	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Chloromethane	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
cis-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
cis-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Dibromochloromethane	ND (0.0019)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Dibromomethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Dichlorodifluoromethane	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Diethyl Ether	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Di-isopropyl ether	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Ethyl tertiary-butyl ether	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Ethylbenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Hexachlorobutadiene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Isopropylbenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Methyl tert-Butyl Ether	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Methylene Chloride	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Naphthalene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
n-Butylbenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
n-Propylbenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
sec-Butylbenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Styrene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
tert-Butylbenzene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Tertiary-amyl methyl ether	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Tetrachloroethene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Tetrahydrofuran	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Toluene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
trans-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Trichloroethene	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Trichlorofluoromethane	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Vinyl Chloride	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Xylene O	ND (0.0048)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Xylene P,M	ND (0.0095)		8260B Low		1	11/09/17 20:16	C7K0160	CK70919
Xylenes (Total)	ND (0.0095)		8260B Low		1	11/09/17 20:16		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*94 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 11/9/17 16:30

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
4,4´-DDE	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
4,4´-DDT	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Aldrin	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
alpha-BHC	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
alpha-Chlordane	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
beta-BHC	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Chlordane (Total)	ND (0.0235)		8081B		1	11/10/17 15:02	C7K0147	CK70909
delta-BHC	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Dieldrin	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Endosulfan I	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Endosulfan II	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Endosulfan Sulfate	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Endrin	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Endrin Ketone	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	11/10/17 15:02	C7K0147	CK70909
gamma-Chlordane	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Heptachlor	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Heptachlor Epoxide	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Hexachlorobenzene	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909
Methoxychlor	ND (0.0029)		8081B		1	11/10/17 15:02	C7K0147	CK70909

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*74 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*70 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/9/17 16:30

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/10/17 13:55		CK70906
Aroclor 1221	ND (0.06)		8082A		1	11/10/17 13:55		CK70906
Aroclor 1232	ND (0.06)		8082A		1	11/10/17 13:55		CK70906
Aroclor 1242	ND (0.06)		8082A		1	11/10/17 13:55		CK70906
Aroclor 1248	ND (0.06)		8082A		1	11/10/17 13:55		CK70906
Aroclor 1254	ND (0.06)		8082A		1	11/10/17 13:55		CK70906
Aroclor 1260	ND (0.06)		8082A		1	11/10/17 13:55		CK70906
Aroclor 1262	ND (0.06)		8082A		1	11/10/17 13:55		CK70906
Aroclor 1268	ND (0.06)		8082A		1	11/10/17 13:55		CK70906

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*92 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*84 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 10.4
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 11/9/17 20:50

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	11/13/17 20:38	C7K0198	CK70954
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	11/13/17 20:38	C7K0198	CK70954
2,4-D	ND (0.051)		8151A		1	11/13/17 20:38	C7K0198	CK70954
2,4-DB	ND (0.051)		8151A		1	11/13/17 20:38	C7K0198	CK70954
Dalapon	ND (0.049)		8151A		1	11/13/17 20:38	C7K0198	CK70954
Dicamba	ND (0.010)		8151A		1	11/13/17 20:38	C7K0198	CK70954
Dichlorprop	ND (0.051)		8151A		1	11/13/17 20:38	C7K0198	CK70954
Dinoseb	ND (0.051)		8151A		1	11/13/17 20:38	C7K0198	CK70954
MCPA	ND (2.51)		8151A		1	11/13/17 20:38	C7K0198	CK70954
MCPP	# ND (2.54)		8151A		1	11/13/17 20:38	C7K0198	CK70954

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*79 %*		*30-150*
Surrogate: DCAA [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
1,2-Dichlorobenzene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
1,3-Dichlorobenzene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
1,4-Dichlorobenzene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2,4,5-Trichlorophenol	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2,4,6-Trichlorophenol	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2,4-Dichlorophenol	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2,4-Dimethylphenol	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2,4-Dinitrophenol	ND (1.86)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2,4-Dinitrotoluene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2,6-Dinitrotoluene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2-Chloronaphthalene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2-Chlorophenol	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2-Methylnaphthalene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2-Methylphenol	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
2-Nitrophenol	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
3,3′-Dichlorobenzidine	ND (0.744)		8270D		1	11/09/17 21:32	C7K0149	CK70910
3+4-Methylphenol	ND (0.744)		8270D		1	11/09/17 21:32	C7K0149	CK70910
4-Bromophenyl-phenylether	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
4-Chloroaniline	ND (0.744)		8270D		1	11/09/17 21:32	C7K0149	CK70910
4-Nitrophenol	ND (1.86)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Acenaphthene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Acenaphthylene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Acetophenone	ND (0.744)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Aniline	ND (1.86)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Anthracene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Azobenzene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Benzo(a)anthracene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Benzo(a)pyrene	ND (0.186)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Benzo(b)fluoranthene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Benzo(g,h,i)perylene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Benzo(k)fluoranthene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
bis(2-Chloroethyl)ether	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
bis(2-chloroisopropyl)Ether	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
bis(2-Ethylhexyl)phthalate	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Butylbenzylphthalate	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Chrysene	ND (0.186)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Dibenzo(a,h)Anthracene	ND (0.186)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Dibenzofuran	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Diethylphthalate	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Dimethylphthalate	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Di-n-butylphthalate	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Di-n-octylphthalate	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Fluoranthene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Fluorene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Hexachlorobenzene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Hexachlorobutadiene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Hexachloroethane	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Indeno(1,2,3-cd)Pyrene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Isophorone	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Naphthalene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Nitrobenzene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
N-Nitrosodimethylamine	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Pentachlorophenol	ND (1.86)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Phenanthrene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Phenol	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910
Pyrene	ND (0.371)		8270D		1	11/09/17 21:32	C7K0149	CK70910

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*60 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*63 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*63 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*70 %*		*30-130*
Surrogate: 2-Fluorophenol	*74 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Nitrobenzene-d5		*60 %*		*30-130*				
Surrogate: Phenol-d6		*75 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*77 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	**1140** (357)		9060		1	DEL	11/14/17 23:27	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/08/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-03
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
1,4-Dioxane	ND (0.100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
2-Butanone	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
2-Chlorotoluene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
2-Hexanone	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
4-Chlorotoluene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
4-Methyl-2-Pentanone	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Acetone	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Benzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Bromobenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Bromochloromethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/08/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-03
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Bromoform	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Bromomethane	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Carbon Disulfide	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Chlorobenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Chloroethane	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Chloroform	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Chloromethane	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Dibromochloromethane	ND (0.0020)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Dibromomethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Dichlorodifluoromethane	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Diethyl Ether	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Di-isopropyl ether	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Ethylbenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Isopropylbenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Methylene Chloride	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Naphthalene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
n-Butylbenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
n-Propylbenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
sec-Butylbenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Styrene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
tert-Butylbenzene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Tetrachloroethene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Tetrahydrofuran	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Toluene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/08/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-03
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Trichloroethene	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Vinyl Chloride	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Xylene O	ND (0.0050)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Xylene P,M	ND (0.0100)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919
Xylenes (Total)	ND (0.0075)		8260B Low		1	11/09/17 17:19	C7K0160	CK70919

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*94 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*91 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
				Total Metals						
Batch CK71043 - 3050B										
Blank										
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	59.9	3.85	mg/kg wet	48.00		125	0-238			
Arsenic	117	7.69	mg/kg wet	123.0		95	80-120			
Barium	240	7.69	mg/kg wet	253.0		95	66-134			
Beryllium	184	0.34	mg/kg wet	192.0		96	80-120			
Cadmium	194	1.54	mg/kg wet	224.0		87	80-120			
Chromium	172	3.08	mg/kg wet	179.0		96	80-120			
Lead	139	15.4	mg/kg wet	145.0		96	80-120			
Nickel	127	7.69	mg/kg wet	143.0		89	80-120			
Selenium	47.6	3.85	mg/kg wet	42.40		112	80-120			
Silver	83.0	1.54	mg/kg wet	81.60		102	80-120			
Thallium	56.0	3.85	mg/kg wet	52.00		108	80-120			
Vanadium	68.6	3.08	mg/kg wet	72.30		95	80-120			
Zinc	701	7.69	mg/kg wet	770.0		91	80-120			
LCS Dup										
Antimony	54.4	3.73	mg/kg wet	48.00		113	80-120	10	30	
Arsenic	117	7.46	mg/kg wet	123.0		95	80-120	0.2	20	
Barium	197	7.46	mg/kg wet	253.0		78	66-134	20	20	
Beryllium	183	0.33	mg/kg wet	192.0		95	80-120	0.7	20	
Cadmium	190	1.49	mg/kg wet	224.0		85	80-120	2	20	
Chromium	169	2.99	mg/kg wet	179.0		94	80-120	2	20	
Lead	139	14.9	mg/kg wet	145.0		96	80-120	0.2	20	
Nickel	125	7.46	mg/kg wet	143.0		88	80-120	2	20	
Selenium	45.4	3.73	mg/kg wet	42.40		107	80-120	5	30	
Silver	80.5	1.49	mg/kg wet	81.60		99	80-120	3	20	
Thallium	54.2	3.73	mg/kg wet	52.00		104	80-120	3	30	
Vanadium	67.8	2.99	mg/kg wet	72.30		94	80-120	1	20	
Zinc	685	7.46	mg/kg wet	770.0		89	80-120	2	20	
Reference										
Lead	3850	14.5	mg/kg wet	4490		86	83-113			
Batch CK71044 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CK71044 - 7471B										
LCS										
Mercury	2.97	0.629	mg/kg wet	2.900		102	80-120			
LCS Dup										
Mercury	2.99	0.649	mg/kg wet	2.900		103	80-120	0.8	20	
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK70919 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK70919 - 5035										
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0482*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0487*		mg/kg wet	*0.05000*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0467*		mg/kg wet	*0.05000*		*93*	*70-130*			
Surrogate: Toluene-d8	*0.0491*		mg/kg wet	*0.05000*		*98*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			
1,1,1-Trichloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2,2-Tetrachloroethane	0.0516	0.0020	mg/kg wet	0.05000		103	70-130			
1,1,2-Trichloroethane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK70919 - 5035										
1,1-Dichloroethane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,1-Dichloroethene	0.0571	0.0050	mg/kg wet	0.05000		114	70-130			
1,1-Dichloropropene	0.0544	0.0050	mg/kg wet	0.05000		109	70-130			
1,2,3-Trichlorobenzene	0.0571	0.0050	mg/kg wet	0.05000		114	70-130			
1,2,3-Trichloropropane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trichlorobenzene	0.0574	0.0050	mg/kg wet	0.05000		115	70-130			
1,2,4-Trimethylbenzene	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
1,2-Dibromo-3-Chloropropane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dibromoethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dichlorobenzene	0.0574	0.0050	mg/kg wet	0.05000		115	70-130			
1,2-Dichloroethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130			
1,2-Dichloropropane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,3,5-Trimethylbenzene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
1,3-Dichlorobenzene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
1,3-Dichloropropane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
1,4-Dichlorobenzene	0.0568	0.0050	mg/kg wet	0.05000		114	70-130			
1,4-Dioxane	0.800	0.100	mg/kg wet	1.000		80	70-130			
2,2-Dichloropropane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
2-Butanone	0.250	0.0100	mg/kg wet	0.2500		100	70-130			
2-Chlorotoluene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
2-Hexanone	0.263	0.0100	mg/kg wet	0.2500		105	70-130			
4-Chlorotoluene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
4-Isopropyltoluene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
4-Methyl-2-Pentanone	0.222	0.0100	mg/kg wet	0.2500		89	70-130			
Acetone	0.241	0.0100	mg/kg wet	0.2500		97	70-130			
Benzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromochloromethane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Bromodichloromethane	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Bromoform	0.0396	0.0050	mg/kg wet	0.05000		79	70-130			
Bromomethane	0.0566	0.0100	mg/kg wet	0.05000		113	70-130			
Carbon Disulfide	0.0592	0.0050	mg/kg wet	0.05000		118	70-130			
Carbon Tetrachloride	0.0404	0.0050	mg/kg wet	0.05000		81	70-130			
Chlorobenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Chloroethane	0.0521	0.0100	mg/kg wet	0.05000		104	70-130			
Chloroform	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Chloromethane	0.0445	0.0100	mg/kg wet	0.05000		89	70-130			
cis-1,2-Dichloroethene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
cis-1,3-Dichloropropene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
Dibromochloromethane	0.0400	0.0020	mg/kg wet	0.05000		80	70-130			
Dibromomethane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Dichlorodifluoromethane	0.0431	0.0100	mg/kg wet	0.05000		86	70-130			
Diethyl Ether	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Di-isopropyl ether	0.0624	0.0050	mg/kg wet	0.05000		125	70-130			
Ethyl tertiary-butyl ether	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK70919 - 5035										
Ethylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
Hexachlorobutadiene	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
Isopropylbenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Methyl tert-Butyl Ether	0.0591	0.0050	mg/kg wet	0.05000		118	70-130			
Methylene Chloride	0.0528	0.0100	mg/kg wet	0.05000		106	70-130			
Naphthalene	0.0565	0.0050	mg/kg wet	0.05000		113	70-130			
n-Butylbenzene	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
n-Propylbenzene	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
sec-Butylbenzene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
Styrene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
tert-Butylbenzene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
Tertiary-amyl methyl ether	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Tetrachloroethene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Tetrahydrofuran	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
Toluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
trans-1,3-Dichloropropene	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			
Trichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
Trichlorofluoromethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
Vinyl Chloride	0.0499	0.0100	mg/kg wet	0.05000		100	70-130			
Xylene O	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Xylene P,M	0.0966	0.0100	mg/kg wet	0.1000		97	70-130			
Xylenes (Total)	0.146	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0527*		mg/kg wet	*0.05000*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0507*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0512*		mg/kg wet	*0.05000*		*102*	*70-130*			
Surrogate: Toluene-d8	*0.0514*		mg/kg wet	*0.05000*		*103*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0430	0.0050	mg/kg wet	0.05000		86	70-130	4	20	
1,1,1-Trichloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	0.04	20	
1,1,2,2-Tetrachloroethane	0.0507	0.0020	mg/kg wet	0.05000		101	70-130	2	20	
1,1,2-Trichloroethane	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	0.8	20	
1,1-Dichloroethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	0.3	20	
1,1-Dichloroethene	0.0573	0.0050	mg/kg wet	0.05000		115	70-130	0.5	20	
1,1-Dichloropropene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	0.4	20	
1,2,3-Trichlorobenzene	0.0573	0.0050	mg/kg wet	0.05000		115	70-130	0.4	20	
1,2,3-Trichloropropane	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	2	20	
1,2,4-Trichlorobenzene	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	1	20	
1,2,4-Trimethylbenzene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	1	20	
1,2-Dibromo-3-Chloropropane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	0.4	20	
1,2-Dibromoethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	3	20	
1,2-Dichlorobenzene	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	0.7	20	
1,2-Dichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	1	20	
1,2-Dichloropropane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	0.9	20	
1,3,5-Trimethylbenzene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	1	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK70919 - 5035										
1,3-Dichlorobenzene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	0.1	20	
1,3-Dichloropropane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	2	20	
1,4-Dichlorobenzene	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	2	20	
1,4-Dioxane	0.732	0.100	mg/kg wet	1.000		73	70-130	9	20	
2,2-Dichloropropane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	0.2	20	
2-Butanone	0.249	0.0100	mg/kg wet	0.2500		99	70-130	0.6	20	
2-Chlorotoluene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	3	20	
2-Hexanone	0.264	0.0100	mg/kg wet	0.2500		105	70-130	0.2	20	
4-Chlorotoluene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	0.1	20	
4-Isopropyltoluene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	2	20	
4-Methyl-2-Pentanone	0.220	0.0100	mg/kg wet	0.2500		88	70-130	0.8	20	
Acetone	0.234	0.0100	mg/kg wet	0.2500		94	70-130	3	20	
Benzene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	0.4	20	
Bromobenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	0.6	20	
Bromochloromethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.8	20	
Bromodichloromethane	0.0430	0.0050	mg/kg wet	0.05000		86	70-130	2	20	
Bromoform	0.0410	0.0050	mg/kg wet	0.05000		82	70-130	3	20	
Bromomethane	0.0560	0.0100	mg/kg wet	0.05000		112	70-130	1	20	
Carbon Disulfide	0.0592	0.0050	mg/kg wet	0.05000		118	70-130	0.03	20	
Carbon Tetrachloride	0.0406	0.0050	mg/kg wet	0.05000		81	70-130	0.5	20	
Chlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	2	20	
Chloroethane	0.0513	0.0100	mg/kg wet	0.05000		103	70-130	1	20	
Chloroform	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	0.7	20	
Chloromethane	0.0435	0.0100	mg/kg wet	0.05000		87	70-130	2	20	
cis-1,2-Dichloroethene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	0.2	20	
cis-1,3-Dichloropropene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	0.9	20	
Dibromochloromethane	0.0416	0.0020	mg/kg wet	0.05000		83	70-130	4	20	
Dibromomethane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	0.5	20	
Dichlorodifluoromethane	0.0420	0.0100	mg/kg wet	0.05000		84	70-130	3	20	
Diethyl Ether	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	1	20	
Di-isopropyl ether	0.0632	0.0050	mg/kg wet	0.05000		126	70-130	1	20	
Ethyl tertiary-butyl ether	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	1	20	
Ethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	20	
Hexachlorobutadiene	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	4	20	
Isopropylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	1	20	
Methyl tert-Butyl Ether	0.0596	0.0050	mg/kg wet	0.05000		119	70-130	0.8	20	
Methylene Chloride	0.0531	0.0100	mg/kg wet	0.05000		106	70-130	0.5	20	
Naphthalene	0.0565	0.0050	mg/kg wet	0.05000		113	70-130	0.04	20	
n-Butylbenzene	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	1	20	
n-Propylbenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	1	20	
sec-Butylbenzene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	2	20	
Styrene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	2	20	
tert-Butylbenzene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	1	20	
Tertiary-amyl methyl ether	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	1	20	
Tetrachloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK70919 - 5035										
Tetrahydrofuran	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	3	20	
Toluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	0	20	
trans-1,2-Dichloroethene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	0.5	20	
trans-1,3-Dichloropropene	0.0422	0.0050	mg/kg wet	0.05000		84	70-130	2	20	
Trichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	0.08	20	
Trichlorofluoromethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	1	20	
Vinyl Chloride	0.0497	0.0100	mg/kg wet	0.05000		99	70-130	0.4	20	
Xylene O	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	1	20	
Xylene P,M	0.0975	0.0100	mg/kg wet	0.1000		98	70-130	1	20	
Xylenes (Total)	0.147	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0525*		mg/kg wet	*0.05000*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0519*		mg/kg wet	*0.05000*		*104*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0514*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0526*		mg/kg wet	*0.05000*		*105*	*70-130*			
8081B Organochlorine Pesticides										
Batch CK70909 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CK70909 - 3546										
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0124*		mg/kg wet	*0.01250*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0105*		mg/kg wet	*0.01250*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0107*		mg/kg wet	*0.01250*		*85*	*30-150*			
LCS										
4,4´-DDD	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
4,4´-DDD [2C]	0.0103	0.0025	mg/kg wet	0.01250		82	40-140			
4,4´-DDE	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
4,4´-DDE [2C]	0.0107	0.0025	mg/kg wet	0.01250		85	40-140			
4,4´-DDT	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
4,4´-DDT [2C]	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Aldrin	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Aldrin [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
alpha-BHC	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
alpha-BHC [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
alpha-Chlordane	0.0103	0.0025	mg/kg wet	0.01250		82	40-140			
alpha-Chlordane [2C]	0.0101	0.0025	mg/kg wet	0.01250		81	40-140			
beta-BHC	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
beta-BHC [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
delta-BHC	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
delta-BHC [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Dieldrin	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Dieldrin [2C]	0.0112	0.0025	mg/kg wet	0.01250		89	40-140			
Endosulfan I	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
Endosulfan I [2C]	0.0107	0.0025	mg/kg wet	0.01250		85	40-140			
Endosulfan II	0.0103	0.0025	mg/kg wet	0.01250		82	40-140			
Endosulfan II [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
Endosulfan Sulfate	0.0104	0.0025	mg/kg wet	0.01250		84	40-140			
Endosulfan Sulfate [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Endrin	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
Endrin [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CK70909 - 3546										
Endrin Ketone	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Endrin Ketone [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
gamma-BHC (Lindane)	0.0104	0.0015	mg/kg wet	0.01250		83	40-140			
gamma-BHC (Lindane) [2C]	0.0108	0.0015	mg/kg wet	0.01250		86	40-140			
gamma-Chlordane	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
gamma-Chlordane [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Heptachlor	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
Heptachlor [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Heptachlor Epoxide	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Heptachlor Epoxide [2C]	0.0109	0.0025	mg/kg wet	0.01250		88	40-140			
Hexachlorobenzene	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Hexachlorobenzene [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140			
Methoxychlor	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
Methoxychlor [2C]	0.0102	0.0025	mg/kg wet	0.01250		81	40-140			
Surrogate: Decachlorobiphenyl	*0.0119*		mg/kg wet	*0.01250*		*95*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0128*		mg/kg wet	*0.01250*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0109*		mg/kg wet	*0.01250*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0109*		mg/kg wet	*0.01250*		*87*	*30-150*			
LCS Dup										
4,4´-DDD	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	3	30	
4,4´-DDD [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	3	30	
4,4´-DDE	0.0103	0.0025	mg/kg wet	0.01250		82	40-140	4	30	
4,4´-DDE [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	3	30	
4,4´-DDT	0.0097	0.0025	mg/kg wet	0.01250		78	40-140	1	30	
4,4´-DDT [2C]	0.0102	0.0025	mg/kg wet	0.01250		81	40-140	2	30	
Aldrin	0.0107	0.0025	mg/kg wet	0.01250		85	40-140	3	30	
Aldrin [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	3	30	
alpha-BHC	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	2	30	
alpha-BHC [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	2	30	
alpha-Chlordane	0.0107	0.0025	mg/kg wet	0.01250		85	40-140	4	30	
alpha-Chlordane [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	3	30	
beta-BHC	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	3	30	
beta-BHC [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140	2	30	
delta-BHC	0.0106	0.0025	mg/kg wet	0.01250		84	40-140	3	30	
delta-BHC [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	3	30	
Dieldrin	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	4	30	
Dieldrin [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	3	30	
Endosulfan I	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	3	30	
Endosulfan I [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	3	30	
Endosulfan II	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	4	30	
Endosulfan II [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	4	30	
Endosulfan Sulfate	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	4	30	
Endosulfan Sulfate [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140	4	30	
Endrin	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	0.03	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CK70909 - 3546										
Endrin [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	3	30	
Endrin Ketone	0.0113	0.0025	mg/kg wet	0.01250		90	40-140	4	30	
Endrin Ketone [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	3	30	
gamma-BHC (Lindane)	0.0107	0.0015	mg/kg wet	0.01250		86	40-140	3	30	
gamma-BHC (Lindane) [2C]	0.0111	0.0015	mg/kg wet	0.01250		89	40-140	2	30	
gamma-Chlordane	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	4	30	
gamma-Chlordane [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	3	30	
Heptachlor	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	3	30	
Heptachlor [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	2	30	
Heptachlor Epoxide	0.0116	0.0025	mg/kg wet	0.01250		92	40-140	4	30	
Heptachlor Epoxide [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	2	30	
Hexachlorobenzene	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	2	30	
Hexachlorobenzene [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	1	30	
Methoxychlor	0.0103	0.0025	mg/kg wet	0.01250		83	40-140	1	30	
Methoxychlor [2C]	0.0103	0.0025	mg/kg wet	0.01250		82	40-140	1	30	
Surrogate: Decachlorobiphenyl	*0.0118*		mg/kg wet	*0.01250*		*95*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0127*		mg/kg wet	*0.01250*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0109*		mg/kg wet	*0.01250*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0108*		mg/kg wet	*0.01250*		*86*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CK70821 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0266*		mg/kg wet	*0.02500*		*107*	*30-150*			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK70821 - 3540C										
Surrogate: Tetrachloro-m-xylene	*0.0191*		mg/kg wet	*0.02500*		*76*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0209*		mg/kg wet	*0.02500*		*83*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		90	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		92	40-140			
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		87	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		98	40-140			
Surrogate: Decachlorobiphenyl	*0.0222*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0255*		mg/kg wet	*0.02500*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0212*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0207*		mg/kg wet	*0.02500*		*83*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		90	40-140	0.2	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		92	40-140	0.7	30	
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		86	40-140	2	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		96	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0216*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0248*		mg/kg wet	*0.02500*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0214*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
Batch CK70906 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0204*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0222*		mg/kg wet	*0.02500*		*89*	*30-150*			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK70906 - 3540C										
Surrogate: Tetrachloro-m-xylene	*0.0175*		mg/kg wet	*0.02500*		*70*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0201*		mg/kg wet	*0.02500*		*80*	*30-150*			
LCS										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		89	40-140			
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		86	40-140			
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		85	40-140			
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		83	40-140			
Surrogate: Decachlorobiphenyl	*0.0214*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0232*		mg/kg wet	*0.02500*		*93*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0202*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0204*		mg/kg wet	*0.02500*		*81*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		92	40-140	3	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		91	40-140	6	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		92	40-140	8	30	
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		90	40-140	8	30	
Surrogate: Decachlorobiphenyl	*0.0225*		mg/kg wet	*0.02500*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0245*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0212*		mg/kg wet	*0.02500*		*85*	*30-150*			
8151A Chlorinated Herbicides										
Batch CK70954 - 3546										
Blank										
2,4,5-T	ND	0.010	mg/kg wet							
2,4,5-T [2C]	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex)	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	0.010	mg/kg wet							
2,4-D	ND	0.047	mg/kg wet							
2,4-D [2C]	ND	0.047	mg/kg wet							
2,4-DB	ND	0.048	mg/kg wet							
2,4-DB [2C]	ND	0.048	mg/kg wet							
Dalapon	ND	0.046	mg/kg wet							
Dalapon [2C]	ND	0.046	mg/kg wet							
Dicamba	ND	0.009	mg/kg wet							
Dicamba [2C]	ND	0.009	mg/kg wet							
Dichlorprop	ND	0.047	mg/kg wet							
Dichlorprop [2C]	ND	0.047	mg/kg wet							
Dinoseb	ND	0.048	mg/kg wet							
Dinoseb [2C]	ND	0.048	mg/kg wet							
MCPA	ND	2.32	mg/kg wet							
MCPA [2C]	ND	2.32	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CK70954 - 3546										
MCPP	ND	2.35	mg/kg wet							
MCPP [2C]	ND	2.35	mg/kg wet							
Surrogate: DCAA	*0.212*		mg/kg wet	*0.2000*		*106*	*30-150*			
Surrogate: DCAA [2C]	*0.171*		mg/kg wet	*0.2000*		*85*	*30-150*			
LCS										
2,4,5-T	0.014	0.010	mg/kg wet	0.01900		76	40-140			
2,4,5-T [2C]	0.013	0.010	mg/kg wet	0.01900		66	40-140			
2,4,5-TP (Silvex)	0.016	0.010	mg/kg wet	0.01900		82	40-140			
2,4,5-TP (Silvex) [2C]	0.012	0.010	mg/kg wet	0.01900		64	40-140			
2,4-D	0.154	0.047	mg/kg wet	0.1880		82	40-140			
2,4-D [2C]	0.129	0.047	mg/kg wet	0.1880		69	40-140			
2,4-DB	0.155	0.048	mg/kg wet	0.1900		82	40-140			
2,4-DB [2C]	0.127	0.048	mg/kg wet	0.1900		67	40-140			
Dalapon	0.260	0.046	mg/kg wet	0.4550		57	40-140			
Dalapon [2C]	0.257	0.046	mg/kg wet	0.4550		57	40-140			
Dicamba	0.014	0.009	mg/kg wet	0.01880		76	40-140			
Dicamba [2C]	0.013	0.009	mg/kg wet	0.01880		70	40-140			
Dichlorprop	0.174	0.047	mg/kg wet	0.1880		93	40-140			
Dichlorprop [2C]	0.130	0.047	mg/kg wet	0.1880		69	40-140			
Dinoseb	0.014	0.048	mg/kg wet	0.09500		14	10-100			
Dinoseb [2C]	0.020	0.048	mg/kg wet	0.09500		21	10-100			
MCPA	17.1	2.32	mg/kg wet	18.60		92	40-140			
MCPA [2C]	14.6	2.32	mg/kg wet	18.60		78	40-140			
MCPP	15.8	2.35	mg/kg wet	18.80		84	40-140			
MCPP [2C]	15.4	2.35	mg/kg wet	18.80		82	40-140			
Surrogate: DCAA	*0.193*		mg/kg wet	*0.2000*		*96*	*30-150*			
Surrogate: DCAA [2C]	*0.156*		mg/kg wet	*0.2000*		*78*	*30-150*			
LCS Dup										
2,4,5-T	0.017	0.010	mg/kg wet	0.01900		88	40-140	15	30	
2,4,5-T [2C]	0.014	0.010	mg/kg wet	0.01900		76	40-140	14	30	
2,4,5-TP (Silvex)	0.018	0.010	mg/kg wet	0.01900		94	40-140	14	30	
2,4,5-TP (Silvex) [2C]	0.014	0.010	mg/kg wet	0.01900		76	40-140	17	30	
2,4-D	0.183	0.047	mg/kg wet	0.1880		98	40-140	17	30	
2,4-D [2C]	0.161	0.047	mg/kg wet	0.1880		85	40-140	22	30	
2,4-DB	0.166	0.048	mg/kg wet	0.1900		87	40-140	7	30	
2,4-DB [2C]	0.140	0.048	mg/kg wet	0.1900		74	40-140	9	30	
Dalapon	0.310	0.046	mg/kg wet	0.4550		68	40-140	18	30	
Dalapon [2C]	0.298	0.046	mg/kg wet	0.4550		66	40-140	15	30	
Dicamba	0.016	0.009	mg/kg wet	0.01880		86	40-140	12	30	
Dicamba [2C]	0.016	0.009	mg/kg wet	0.01880		86	40-140	21	30	
Dichlorprop	0.204	0.047	mg/kg wet	0.1880		109	40-140	16	30	
Dichlorprop [2C]	0.155	0.047	mg/kg wet	0.1880		82	40-140	18	30	
Dinoseb	0.020	0.048	mg/kg wet	0.09500		21	10-100	36	30	D+
Dinoseb [2C]	0.024	0.048	mg/kg wet	0.09500		25	10-100	18	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CK70954 - 3546										
MCPA	20.5	2.32	mg/kg wet	18.60		110	40-140	18	30	
MCPA [2C]	15.6	2.32	mg/kg wet	18.60		84	40-140	7	30	
MCPP	18.5	2.35	mg/kg wet	18.80		98	40-140	16	30	
MCPP [2C]	18.0	2.35	mg/kg wet	18.80		96	40-140	15	30	
Surrogate: DCAA	*0.215*		mg/kg wet	*0.2000*		*108*	*30-150*			
Surrogate: DCAA [2C]	*0.168*		mg/kg wet	*0.2000*		*84*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CK70910 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK70910 - 3546										
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.34*		mg/kg wet	*3.333*		*70*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.95*		mg/kg wet	*5.000*		*79*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*4.24*		mg/kg wet	*5.000*		*85*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.83*		mg/kg wet	*3.333*		*85*	*30-130*			
Surrogate: 2-Fluorophenol	*4.22*		mg/kg wet	*5.000*		*84*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.70*		mg/kg wet	*3.333*		*81*	*30-130*			
Surrogate: Phenol-d6	*4.36*		mg/kg wet	*5.000*		*87*	*30-130*			
Surrogate: p-Terphenyl-d14	*4.04*		mg/kg wet	*3.333*		*121*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,2-Dichlorobenzene	2.41	0.333	mg/kg wet	3.333		72	40-140			
1,3-Dichlorobenzene	2.39	0.333	mg/kg wet	3.333		72	40-140			
1,4-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140			
2,4,5-Trichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
2,4,6-Trichlorophenol	2.63	0.333	mg/kg wet	3.333		79	30-130			
2,4-Dichlorophenol	2.52	0.333	mg/kg wet	3.333		76	30-130			
2,4-Dimethylphenol	2.46	0.333	mg/kg wet	3.333		74	30-130			
2,4-Dinitrophenol	2.29	1.67	mg/kg wet	3.333		69	30-130			
2,4-Dinitrotoluene	2.69	0.333	mg/kg wet	3.333		81	40-140			
2,6-Dinitrotoluene	2.52	0.333	mg/kg wet	3.333		76	40-140			
2-Chloronaphthalene	2.53	0.333	mg/kg wet	3.333		76	40-140			

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK70910 - 3546										
2-Chlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130			
2-Methylnaphthalene	2.59	0.333	mg/kg wet	3.333		78	40-140			
2-Methylphenol	2.68	0.333	mg/kg wet	3.333		80	30-130			
2-Nitrophenol	2.37	0.333	mg/kg wet	3.333		71	30-130			
3,3´-Dichlorobenzidine	2.18	0.667	mg/kg wet	3.333		65	40-140			
3+4-Methylphenol	5.07	0.667	mg/kg wet	6.667		76	30-130			
4-Bromophenyl-phenylether	2.76	0.333	mg/kg wet	3.333		83	40-140			
4-Chloroaniline	2.12	0.667	mg/kg wet	3.333		64	40-140			
4-Nitrophenol	2.65	1.67	mg/kg wet	3.333		80	30-130			
Acenaphthene	2.21	0.333	mg/kg wet	3.333		66	40-140			
Acenaphthylene	2.79	0.333	mg/kg wet	3.333		84	40-140			
Acetophenone	2.50	0.667	mg/kg wet	3.333		75	40-140			
Aniline	2.02	1.67	mg/kg wet	3.333		61	40-140			
Anthracene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Azobenzene	2.52	0.333	mg/kg wet	3.333		76	40-140			
Benzo(a)anthracene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(a)pyrene	3.00	0.167	mg/kg wet	3.333		90	40-140			
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		92	40-140			
Benzo(g,h,i)perylene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Benzo(k)fluoranthene	2.57	0.333	mg/kg wet	3.333		77	40-140			
bis(2-Chloroethoxy)methane	2.39	0.333	mg/kg wet	3.333		72	40-140			
bis(2-Chloroethyl)ether	2.27	0.333	mg/kg wet	3.333		68	40-140			
bis(2-chloroisopropyl)Ether	2.26	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Ethylhexyl)phthalate	2.94	0.333	mg/kg wet	3.333		88	40-140			
Butylbenzylphthalate	2.73	0.333	mg/kg wet	3.333		82	40-140			
Chrysene	2.80	0.167	mg/kg wet	3.333		84	40-140			
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140			
Dibenzofuran	2.72	0.333	mg/kg wet	3.333		81	40-140			
Diethylphthalate	3.09	0.333	mg/kg wet	3.333		93	40-140			
Dimethylphthalate	2.81	0.333	mg/kg wet	3.333		84	40-140			
Di-n-butylphthalate	3.02	0.333	mg/kg wet	3.333		91	40-140			
Di-n-octylphthalate	3.55	0.333	mg/kg wet	3.333		106	40-140			
Fluoranthene	3.15	0.333	mg/kg wet	3.333		95	40-140			
Fluorene	2.93	0.333	mg/kg wet	3.333		88	40-140			
Hexachlorobenzene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Hexachlorobutadiene	2.52	0.333	mg/kg wet	3.333		76	40-140			
Hexachloroethane	2.33	0.333	mg/kg wet	3.333		70	40-140			
Indeno(1,2,3-cd)Pyrene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Isophorone	2.24	0.333	mg/kg wet	3.333		67	40-140			
Naphthalene	2.51	0.333	mg/kg wet	3.333		75	40-140			
Nitrobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140			
N-Nitrosodimethylamine	2.18	0.333	mg/kg wet	3.333		65	40-140			
Pentachlorophenol	2.72	1.67	mg/kg wet	3.333		82	30-130			
Phenanthrene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Phenol	2.28	0.333	mg/kg wet	3.333		68	30-130			

CERTIFICATE OF ANALYSIS

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Quality Control Data

8270D Semi-Volatile Organic Compounds

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CK70910 - 3546										
Pyrene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.44*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.38*		mg/kg wet	*5.000*		*88*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.89*		mg/kg wet	*5.000*		*78*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.80*		mg/kg wet	*3.333*		*84*	*30-130*			
Surrogate: 2-Fluorophenol	*4.45*		mg/kg wet	*5.000*		*89*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.60*		mg/kg wet	*3.333*		*78*	*30-130*			
Surrogate: Phenol-d6	*3.88*		mg/kg wet	*5.000*		*78*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.07*		mg/kg wet	*3.333*		*92*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.15	0.333	mg/kg wet	3.333		65	40-140	15	30	
1,2-Dichlorobenzene	2.04	0.333	mg/kg wet	3.333		61	40-140	17	30	
1,3-Dichlorobenzene	2.03	0.333	mg/kg wet	3.333		61	40-140	16	30	
1,4-Dichlorobenzene	2.01	0.333	mg/kg wet	3.333		60	40-140	16	30	
2,4,5-Trichlorophenol	2.35	0.333	mg/kg wet	3.333		71	30-130	13	30	
2,4,6-Trichlorophenol	2.30	0.333	mg/kg wet	3.333		69	30-130	14	30	
2,4-Dichlorophenol	2.16	0.333	mg/kg wet	3.333		65	30-130	15	30	
2,4-Dimethylphenol	2.11	0.333	mg/kg wet	3.333		63	30-130	15	30	
2,4-Dinitrophenol	2.02	1.67	mg/kg wet	3.333		61	30-130	12	30	
2,4-Dinitrotoluene	2.35	0.333	mg/kg wet	3.333		71	40-140	13	30	
2,6-Dinitrotoluene	2.25	0.333	mg/kg wet	3.333		68	40-140	11	30	
2-Chloronaphthalene	2.15	0.333	mg/kg wet	3.333		64	40-140	16	30	
2-Chlorophenol	2.04	0.333	mg/kg wet	3.333		61	30-130	15	30	
2-Methylnaphthalene	2.17	0.333	mg/kg wet	3.333		65	40-140	18	30	
2-Methylphenol	1.65	0.333	mg/kg wet	3.333		49	30-130	48	30	D+
2-Nitrophenol	2.07	0.333	mg/kg wet	3.333		62	30-130	13	30	
3,3´-Dichlorobenzidine	2.03	0.667	mg/kg wet	3.333		61	40-140	7	30	
3+4-Methylphenol	4.31	0.667	mg/kg wet	6.667		65	30-130	16	30	
4-Bromophenyl-phenylether	2.39	0.333	mg/kg wet	3.333		72	40-140	15	30	
4-Chloroaniline	2.00	0.667	mg/kg wet	3.333		60	40-140	6	30	
4-Nitrophenol	2.21	1.67	mg/kg wet	3.333		66	30-130	18	30	
Acenaphthene	2.15	0.333	mg/kg wet	3.333		65	40-140	3	30	
Acenaphthylene	2.35	0.333	mg/kg wet	3.333		70	40-140	17	30	
Acetophenone	2.14	0.667	mg/kg wet	3.333		64	40-140	16	30	
Aniline	1.97	1.67	mg/kg wet	3.333		59	40-140	2	30	
Anthracene	2.43	0.333	mg/kg wet	3.333		73	40-140	14	30	
Azobenzene	2.17	0.333	mg/kg wet	3.333		65	40-140	15	30	
Benzo(a)anthracene	2.52	0.333	mg/kg wet	3.333		76	40-140	15	30	
Benzo(a)pyrene	2.58	0.167	mg/kg wet	3.333		77	40-140	15	30	
Benzo(b)fluoranthene	2.45	0.333	mg/kg wet	3.333		74	40-140	22	30	
Benzo(g,h,i)perylene	2.56	0.333	mg/kg wet	3.333		77	40-140	15	30	
Benzo(k)fluoranthene	2.46	0.333	mg/kg wet	3.333		74	40-140	5	30	
bis(2-Chloroethoxy)methane	2.07	0.333	mg/kg wet	3.333		62	40-140	14	30	
bis(2-Chloroethyl)ether	1.95	0.333	mg/kg wet	3.333		59	40-140	15	30	
bis(2-chloroisopropyl)Ether	1.95	0.333	mg/kg wet	3.333		59	40-140	14	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK70910 - 3546										
bis(2-Ethylhexyl)phthalate	2.50	0.333	mg/kg wet	3.333		75	40-140	16	30	
Butylbenzylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140	15	30	
Chrysene	2.42	0.167	mg/kg wet	3.333		72	40-140	15	30	
Dibenzo(a,h)Anthracene	2.55	0.167	mg/kg wet	3.333		77	40-140	14	30	
Dibenzofuran	2.41	0.333	mg/kg wet	3.333		72	40-140	12	30	
Diethylphthalate	2.66	0.333	mg/kg wet	3.333		80	40-140	15	30	
Dimethylphthalate	2.50	0.333	mg/kg wet	3.333		75	40-140	12	30	
Di-n-butylphthalate	2.56	0.333	mg/kg wet	3.333		77	40-140	17	30	
Di-n-octylphthalate	3.02	0.333	mg/kg wet	3.333		91	40-140	16	30	
Fluoranthene	2.66	0.333	mg/kg wet	3.333		80	40-140	17	30	
Fluorene	2.45	0.333	mg/kg wet	3.333		73	40-140	18	30	
Hexachlorobenzene	2.40	0.333	mg/kg wet	3.333		72	40-140	14	30	
Hexachlorobutadiene	2.17	0.333	mg/kg wet	3.333		65	40-140	15	30	
Hexachloroethane	1.98	0.333	mg/kg wet	3.333		59	40-140	16	30	
Indeno(1,2,3-cd)Pyrene	2.54	0.333	mg/kg wet	3.333		76	40-140	14	30	
Isophorone	1.98	0.333	mg/kg wet	3.333		59	40-140	13	30	
Naphthalene	2.15	0.333	mg/kg wet	3.333		65	40-140	15	30	
Nitrobenzene	2.05	0.333	mg/kg wet	3.333		61	40-140	13	30	
N-Nitrosodimethylamine	1.64	0.333	mg/kg wet	3.333		49	40-140	28	30	
Pentachlorophenol	2.36	1.67	mg/kg wet	3.333		71	30-130	14	30	
Phenanthrene	2.30	0.333	mg/kg wet	3.333		69	40-140	14	30	
Phenol	2.33	0.333	mg/kg wet	3.333		70	30-130	2	30	
Pyrene	2.33	0.333	mg/kg wet	3.333		70	40-140	13	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.01*		mg/kg wet	*3.333*		*60*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.45*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.23*		mg/kg wet	*5.000*		*65*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.32*		mg/kg wet	*3.333*		*70*	*30-130*			
Surrogate: 2-Fluorophenol	*3.74*		mg/kg wet	*5.000*		*75*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.16*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: Phenol-d6	*3.76*		mg/kg wet	*5.000*		*75*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.58*		mg/kg wet	*3.333*		*77*	*30-130*			
Classical Chemistry										
Batch CK71448 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	200	mg/kg							
Total Organic Carbon (2)	ND	200	mg/kg							
Total Organic Carbon (Average)	ND	200	mg/kg dry wt							
LCS										
Total Organic Carbon (1)	9630	200	mg/kg	10000		96	80-120			
Total Organic Carbon (2)	10300	200	mg/kg	10000		103	80-120			
Total Organic Carbon (Average)	9950	200	mg/kg dry wt							
LCS Dup										
Total Organic Carbon (1)	9700	200	mg/kg	10000		97	80-120	0.8	200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CK71448 - General Preparation										
Total Organic Carbon (2)	9420	200	mg/kg	10000		94	80-120	9	200	
Total Organic Carbon (Average)	9560	200	mg/kg dry wt							
Reference										
Total Organic Carbon (Average)	1.40		mg/kg dry wt							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711199

Notes and Definitions

Z-09	ND
Z-08	See Attached
XH	Peaks found in the retention time window for MCPP did not confirm by GC/MS.
U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
#	Modified result
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

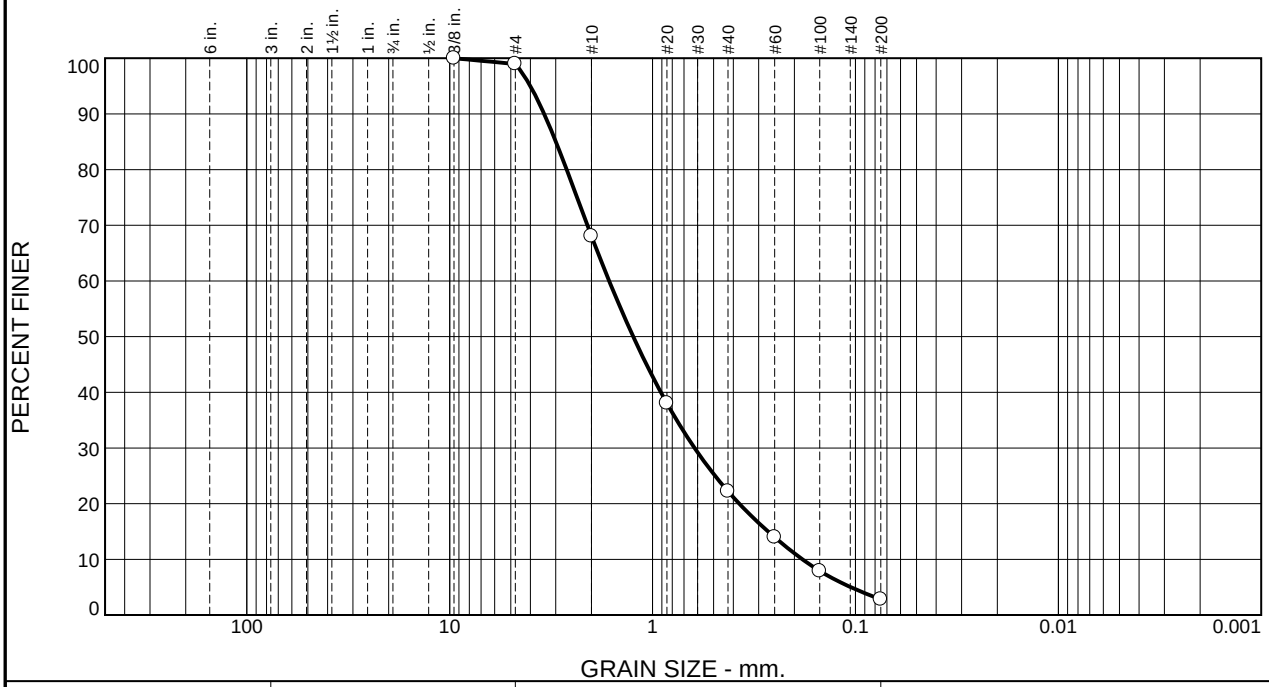
THIELSCH ENGINEERING	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 http://www.thielsch.com	Client Information: **Charter Contracting** **PM: Marc Levesque** Assigned By: **Marc Levesque**	Laboratory Information Project Name: **Wynn Boston Harbor Sediment Remediation** **Boston, MA** ESS Project Number: 1711199 Report Date: 11.14.17

LABORATORY TESTING DATA SHEET

Boring ID	Sample No.	Depth (ft)	Laboratory No.	Identification Tests							Density		Strength Tests				
				Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Setup as % of Proctor	CBR Dry unit wt. pcf	CBR Water Content %	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
Type A Capping Sand	1711199-01	Stock.	17-S-1775	3.0			1.0	96.2	2.8								Light Brown well-graded sand (SW)
Type C Capping Sand	1711199-02	Stock.	17-S-1776	12.1			10.2	34.6	55.2								Grey sandy silt (ML)

Reviewed By _____ Date Reviewed: *11.15.17*

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	30.9	45.9	19.4	2.8	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.0		
#10	68.1		
#20	38.0		
#40	22.2		
#60	14.0		
#100	7.9		
#200	2.8		

* (no specification provided)

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4230 D_{85}= 2.9966 D_{60}= 1.6368
D_{50}= 1.2454 D_{30}= 0.6208 D_{15}= 0.2694
D_{10}= 0.1826 C_u= 8.96 C_c= 1.29

Remarks

Date Received: 11/8/17 **Date Tested:** 11/14/17

Tested By: RR / JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

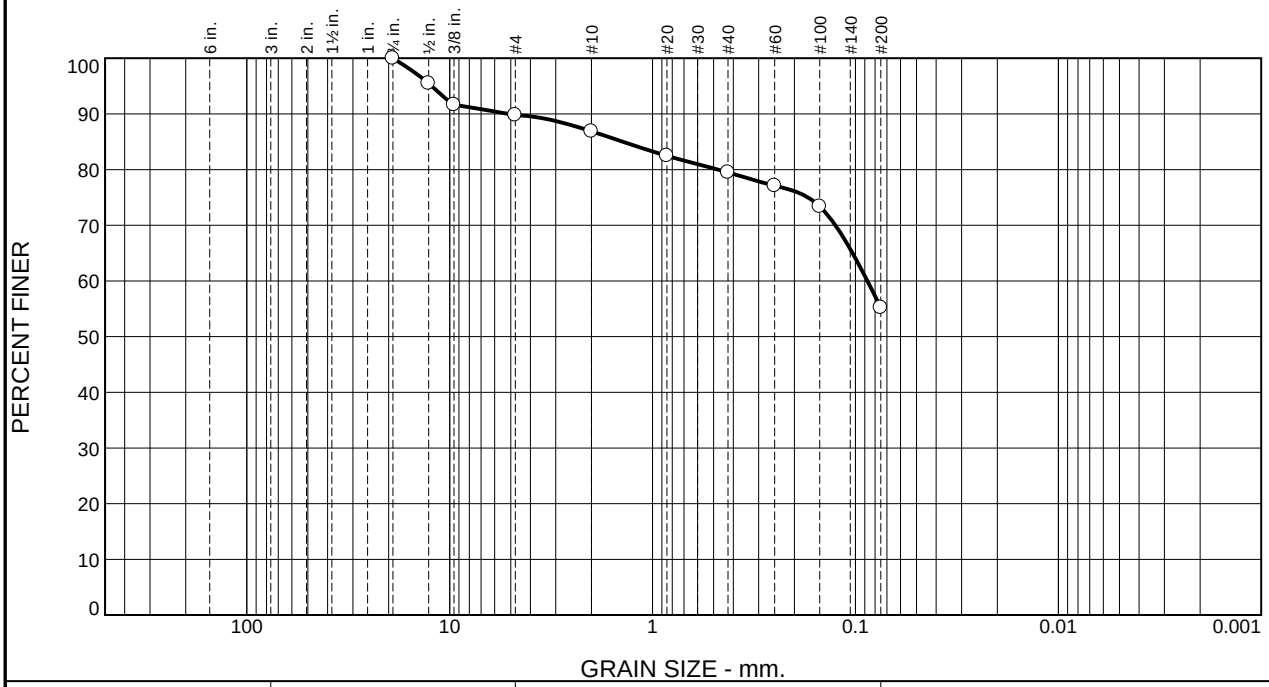
Source of Sample: Grab/Composite **Depth:** Stock. **Date Sampled:** 11/8/17
Sample Number: Type A Capping Sand

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711199 **Figure** 1711199-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	10.2	2.9	7.4	24.3	55.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.75"	100.0		
0.5"	95.5		
0.375"	91.6		
#4	89.8		
#10	86.9		
#20	82.5		
#40	79.5		
#60	77.1		
#100	73.4		
#200	55.2		

* (no specification provided)

Material Description

Grey sandy silt (ML)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 5.1417 D_{85}= 1.4003 D_{60}= 0.0873
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample was visually checked for plasticity and appeared non-plastic.

Date Received: 11/8/17 **Date Tested:** 11/14/17

Tested By: RR / JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

Source of Sample: Grab/Composite **Depth:** Stock. **Date Sampled:** 11/8/17
Sample Number: Type C Capping Sand

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711199 **Figure** 1711199-02

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Prepared Date:

November 20, 2017

Report Information:

Pace Project #: 10410333
Sample Receipt Date: 11/09/2017
Client Project #: 1711199
Client Sub PO #: B02407
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:

Joanne Richardson

November 20, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on two samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 49-83%. Except for two low values, which were flagged "R" on the results table, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

A laboratory spike sample was also prepared using clean reference matrix that had been fortified with native standard materials. The recoveries of the native compounds ranged from 80-97%. These results were within the target range for the method. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

It should be noted that the samples were analyzed without a previous instrument blank. Since PCDDs and PCDFs were not detected in the field samples at the reporting limits, the reported results were not impacted.

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Report No.....10410333

Appendix A

Sample Management

10410333

ESS Laboratory PACE

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1711199

Turn Time **Standard** Other

Regulatory State: **MA** RI CT NH NJ NY ME Other

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other

Reporting Limits - **S-1**

Electonic Deliverables *Excel Access *PDF

Co. Name: ESS Laboratory	Project #:	Project Name: 1711199	
Contact Person: Shawn Morrell	Proj. Location:		
Address: ext 3083	City , State:	Zip:	PO #: B02407
Tel.	email: smorrell@thielsch.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: Dioxin EPA 8290								
	11/8/17	1206	G	S	1711199-01					x								061
	11/8/17	1206	G	S	1711199-02					x								062

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present X Yes ____ No

Seals Intact X Yes ____ No NA:____

Cooler Temperature: 5.2°c

Internal Use Only
[ ] Pickup
[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-____

Sampled by :

Comments: ***Please provide electronic deliverables**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
11/8/17 1525	UPS		
	PACE 11/9/17 930 T=5.2°c		

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 30Aug2017 Page 1 of 2
	Document No.: **F-MN-L-213-rev.21**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: ESS LABORATORY

Project #:

WO#: 10410333

10410333

Courier: ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 12 037 497 01 4779 4614

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 5.6 **Cooler Temp Corrected (°C):** 5.2 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** -0.4 **Date and Initials of Person Examining Contents:** ET 11/9/17

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present?	☒ Yes ☐ No	1.
Chain of Custody Filled Out?	☒ Yes ☐ No	2.
Chain of Custody Relinquished?	☒ Yes ☐ No	3.
Sampler Name and/or Signature on COC?	☐ Yes ☒ No ☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes ☐ No	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes ☒ No	6.
Rush Turn Around Time Requested?	☐ Yes ☒ No	7.
Sufficient Volume?	☒ Yes ☐ No	8.
Correct Containers Used?	☒ Yes ☐ No	9.
-Pace Containers Used?	☐ Yes ☒ No	
Containers Intact?	☒ Yes ☐ No	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes ☐ No ☒ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☐ Yes ☒ No	12. NO DATE + TIME ON LABELS
All containers needing acid/base preservation have been checked?	☐ Yes ☐ No ☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes ☐ No ☒ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☐ Yes ☐ No ☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes ☐ No ☒ N/A	14.
Trip Blank Present?	☐ Yes ☐ No ☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes ☐ No ☒ N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Joanne Richardson **Date:** 11-9-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711199-01			
Lab Sample ID	10410333001			
Filename	F171120A_04			
Injected By	ZMS			
Total Amount Extracted	11.1 g	Matrix	Solid	
% Moisture	2.6	Dilution	NA	
Dry Weight Extracted	10.8 g	Collected	11/08/2017	12:06
ICAL ID	F171017	Received	11/09/2017	09:30
CCal Filename(s)	F171120A_02 & F171120A_06	Extracted	11/10/2017	17:45
Method Blank ID	BLANK-58686	Analyzed	11/20/2017	10:55

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	78
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	67
				1,2,3,7,8-PeCDF-13C	2.00	79
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	82
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	77
				1,2,3,4,7,8-HxCDF-13C	2.00	56
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	63
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	64
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	66
				1,2,3,4,7,8-HxCDD-13C	2.00	58
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	55
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	52
				1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	49
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	55
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711199-02			
Lab Sample ID	10410333002			
Filename	F171120A_05			
Injected By	ZMS			
Total Amount Extracted	11.9 g	Matrix	Solid	
% Moisture	10.3	Dilution	NA	
Dry Weight Extracted	10.7 g	Collected	11/08/2017	12:06
ICAL ID	F171017	Received	11/09/2017	09:30
CCal Filename(s)	F171120A_02 & F171120A_06	Extracted	11/10/2017	17:45
Method Blank ID	BLANK-58686	Analyzed	11/20/2017	11:38

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	74
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	64
				1,2,3,7,8-PeCDF-13C	2.00	79
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	83
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	78
				1,2,3,4,7,8-HxCDF-13C	2.00	62
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	68
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	71
				1,2,3,4,7,8-HxCDD-13C	2.00	60
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	59
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	56
				1,2,3,4,7,8,9-HpCDF-13C	2.00	63
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	57
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	60
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	56
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-58686	Matrix	Solid
Filename	F171116B_04	Dilution	NA
Total Amount Extracted	20.0 g	Extracted	11/10/2017 17:45
ICAL ID	F171017	Analyzed	11/17/2017 00:13
CCal Filename(s)	F171116A_09 & F171116B_16	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	48
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	42
				1,2,3,7,8-PeCDF-13C	2.00	43
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	51
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	50
				1,2,3,4,7,8-HxCDF-13C	2.00	62
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	68
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	63
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	39 R
				1,2,3,4,7,8-HxCDD-13C	2.00	76
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	66
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	63
				1,2,3,4,7,8,9-HpCDF-13C	2.00	51
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	58
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	34 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	40
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-58687		
Filename	F171116B_01	Matrix	Solid
Total Amount Extracted	20.7 g	Dilution	NA
ICAL ID	F171017	Extracted	11/10/2017 17:45
CCal Filename(s)	F171116A_09 & F171116B_16	Analyzed	11/16/2017 15:37
Method Blank ID	BLANK-58686	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.17	87	2,3,7,8-TCDF-13C	2.0	62
Total TCDF				2,3,7,8-TCDD-13C	2.0	67
				1,2,3,7,8-PeCDF-13C	2.0	59
2,3,7,8-TCDD	0.20	0.17	85	2,3,4,7,8-PeCDF-13C	2.0	60
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	68
				1,2,3,4,7,8-HxCDF-13C	2.0	65
1,2,3,7,8-PeCDF	1.0	0.91	91	1,2,3,6,7,8-HxCDF-13C	2.0	65
2,3,4,7,8-PeCDF	1.0	0.83	83	2,3,4,6,7,8-HxCDF-13C	2.0	71
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	61
				1,2,3,4,7,8-HxCDD-13C	2.0	75
1,2,3,7,8-PeCDD	1.0	0.85	85	1,2,3,6,7,8-HxCDD-13C	2.0	61
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	60
				1,2,3,4,7,8,9-HpCDF-13C	2.0	57
1,2,3,4,7,8-HxCDF	1.0	0.88	88	1,2,3,4,6,7,8-HpCDD-13C	2.0	59
1,2,3,6,7,8-HxCDF	1.0	0.86	86	OCDD-13C	4.0	41
2,3,4,6,7,8-HxCDF	1.0	0.80	80			
1,2,3,7,8,9-HxCDF	1.0	0.86	86	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	0.85	85	2,3,7,8-TCDD-37Cl4	0.20	58
1,2,3,6,7,8-HxCDD	1.0	0.97	97			
1,2,3,7,8,9-HxCDD	1.0	0.91	91			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.90	90			
1,2,3,4,7,8,9-HpCDF	1.0	0.85	85			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.86	86			
Total HpCDD						
OCDF	2.0	1.8	88			
OCDD	2.0	1.7	86			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
ESS Project No. 1711199
Project Manager Marc Levesque
Date Received 11/8/2017 (by)

Client Company Charter
Client Email
Site Location
Date Assigned 11/8/2017

Collected By
Date Required 11/15/2017

Sample Information				Lab No.	Identification Tests								Permeability		Compaction			Soil Strength			Consol.		Notes
Boring/ Test Pit No.	Sample or depth	Sample date	ESS Sample ID		Water Cont. %	LL & PL %	Org. %	Bulk	Sieve -200 %	Hyd -2μ %	G_s	Tube Den-sity	Sand	Clay	Mod.	Std.	CBR	Un-con-fined	UU	CIU	Stand ard	E.O.P.	
					D2216	D4318	D2974		D422		D854		D2434	D5084	D1557	D698	D1883	D2166	D2850	D4767	D2435	D2435	#
Type A Capping Sand		11/8/17	1711199-01		X				X														**
Type C Capping Sand		11/8/17	1711199-02		X				X														**

Notes: ** = Material Classification D2487

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1711726

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 6:07 pm, Dec 12, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses
Pace Analytical - Minneapolis, MN Dioxin, Dioxin

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

SAMPLE RECEIPT

The following samples were received on November 28, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Low Level VOA vials were frozen by ESS Laboratory on November 28, 2017 at 20:48.

Lab Number	Sample Name	Matrix	Analysis
1711726-01	Type A-Capping Sand-002	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-02	Type A-Capping Sand-003	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-03	Type A-Capping Sand-004	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-04	Type A-Capping Sand-005	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-05	Type A-Capping Sand-006	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-06	Type A-Capping Sand-007	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-07	Type A-Capping Sand-008	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-08	Type A-Capping Sand-009	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-09	Type C-Capping Sand-002	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-10	Type C-Capping Sand-003	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711726-11	Trip Blank	Solid	8260B Low

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711726

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

C7K0460-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
sec-Butylbenzene (23% @ 20%)

CK72939-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
1,2,3-Trichloropropane (22% @ 20%), 1,4-Dioxane (23% @ 20%), 2-Butanone (24% @ 20%), 2-Hexanone (22% @ 20%), 4-Methyl-2-Pentanone (28% @ 20%), Acetone (26% @ 20%), Methyl tert-Butyl Ether (21% @ 20%), Tetrahydrofuran (25% @ 20%)

8151A Chlorinated Herbicides

1711726-09 **Modified result**
MCPP

1711726-09 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

1711726-10 **Modified result**
MCPP

1711726-10 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

C7L0001-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4,5-T (18% @ 15%), 2,4,5-TP (Silvex) (20% @ 15%)

C7L0001-CCV3 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

C7L0001-CCV4 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

CK72927-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
2,4-DB [2C] (34% @ 30%)

8270D Semi-Volatile Organic Compounds

C7K0432-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (81% @ 80-120%)

C7K0432-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2-Methylphenol (31% @ 20%), 4-Nitrophenol (29% @ 20%), Fluorene (25% @ 20%), N-Nitrosodimethylamine (27% @ 20%), Pentachlorophenol (26% @ 20%)

C7K0433-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (112% @ 80-120%), Pentachlorophenol (98% @ 80-120%)

C7K0433-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
4-Chloroaniline (21% @ 20%), bis(2-Chloroethyl)ether (22% @ 20%)

Classical Chemistry

1711726-05 **RSD of replicate analysis >25%, reanalysis produced similar results, sample is non-homogeneous.**
Total Organic Carbon (Average)

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711726

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711726-01 through 1711726-11**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

(X) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	(X) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	( ) MassDEP EPH CAM IV B	(X) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes (X) No ( )*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard
Date: December 12, 2017
Printed Name: Laurel Stoddard
Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.51)		6020A		20	NAR	11/29/17 16:03	2.04	100	CK72844
Arsenic	**5.85** (2.54)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844
Barium	**2.72** (2.54)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844
Beryllium	**0.43** (0.11)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844
Cadmium	ND (0.51)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844
Chromium	**1.04** (1.01)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844
Lead	ND (5.07)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844
Mercury	ND (0.034)		7471B		1	MJV	11/29/17 14:00	0.6	40	CK72845
Nickel	ND (2.54)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844
Selenium	ND (0.51)		6020A		20	NAR	11/29/17 16:03	2.04	100	CK72844
Silver	ND (0.51)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844
Thallium	ND (0.51)		6020A		20	NAR	11/29/17 16:03	2.04	100	CK72844
Vanadium	ND (1.01)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844
Zinc	**18.2** (2.54)		6010C		1	KJK	11/29/17 12:43	2.04	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 4.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,1,1-Trichloroethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,1,2,2-Tetrachloroethane	ND (0.0021)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,1,2-Trichloroethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,1-Dichloroethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,1-Dichloroethene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,1-Dichloropropene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,2,3-Trichlorobenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,2,3-Trichloropropane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,2,4-Trichlorobenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,2,4-Trimethylbenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,2-Dibromo-3-Chloropropane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,2-Dibromoethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,2-Dichlorobenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,2-Dichloroethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,2-Dichloropropane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,3,5-Trimethylbenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,3-Dichlorobenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,3-Dichloropropane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,4-Dichlorobenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
1,4-Dioxane	ND (0.106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
2,2-Dichloropropane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
2-Butanone	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
2-Chlorotoluene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
2-Hexanone	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
4-Chlorotoluene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
4-Isopropyltoluene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
4-Methyl-2-Pentanone	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Acetone	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Benzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Bromobenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Bromochloromethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 4.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Bromoform	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Bromomethane	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Carbon Disulfide	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Carbon Tetrachloride	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Chlorobenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Chloroethane	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Chloroform	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Chloromethane	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
cis-1,2-Dichloroethene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
cis-1,3-Dichloropropene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Dibromochloromethane	ND (0.0021)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Dibromomethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Dichlorodifluoromethane	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Diethyl Ether	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Di-isopropyl ether	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Ethyl tertiary-butyl ether	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Ethylbenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Hexachlorobutadiene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Isopropylbenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Methyl tert-Butyl Ether	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Methylene Chloride	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Naphthalene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
n-Butylbenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
n-Propylbenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
sec-Butylbenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Styrene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
tert-Butylbenzene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Tertiary-amyl methyl ether	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Tetrachloroethene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Tetrahydrofuran	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Toluene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 4.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
trans-1,3-Dichloropropene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Trichloroethene	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Trichlorofluoromethane	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Vinyl Chloride	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Xylene O	ND (0.0053)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Xylene P,M	ND (0.0106)		8260B Low		1	11/29/17 20:49	C7K0446	CK72939
Xylenes (Total)	ND (0.0106)		8260B Low		1	11/29/17 20:49		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*103 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
4,4´-DDE	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
4,4´-DDT	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Aldrin	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
alpha-BHC	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
alpha-Chlordane	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
beta-BHC	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Chlordane (Total)	ND (0.0216)		8081B		1	11/29/17 18:08	C7K0434	CK72816
delta-BHC	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Dieldrin	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Endosulfan I	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Endosulfan II	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Endosulfan Sulfate	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Endrin	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Endrin Ketone	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	11/29/17 18:08	C7K0434	CK72816
gamma-Chlordane	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Heptachlor	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Heptachlor Epoxide	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Hexachlorobenzene	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816
Methoxychlor	ND (0.0027)		8081B		1	11/29/17 18:08	C7K0434	CK72816

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*64 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*32 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*34 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 11:40

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/30/17 11:49		CK72812
Aroclor 1221	ND (0.05)		8082A		1	11/30/17 11:49		CK72812
Aroclor 1232	ND (0.05)		8082A		1	11/30/17 11:49		CK72812
Aroclor 1242	ND (0.05)		8082A		1	11/30/17 11:49		CK72812
Aroclor 1248	ND (0.05)		8082A		1	11/30/17 11:49		CK72812
Aroclor 1254	ND (0.05)		8082A		1	11/30/17 11:49		CK72812
Aroclor 1260	ND (0.05)		8082A		1	11/30/17 11:49		CK72812
Aroclor 1262	ND (0.05)		8082A		1	11/30/17 11:49		CK72812
Aroclor 1268	ND (0.05)		8082A		1	11/30/17 11:49		CK72812

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*92 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/01/17 16:20	C7L0001	CK72927
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/01/17 16:20	C7L0001	CK72927
2,4-D	ND (0.048)		8151A		1	12/01/17 16:20	C7L0001	CK72927
2,4-DB	ND (0.048)		8151A		1	12/01/17 16:20	C7L0001	CK72927
Dalapon	ND (0.046)		8151A		1	12/01/17 16:20	C7L0001	CK72927
Dicamba	ND (0.010)		8151A		1	12/01/17 16:20	C7L0001	CK72927
Dichlorprop	ND (0.048)		8151A		1	12/01/17 16:20	C7L0001	CK72927
Dinoseb	ND (0.048)		8151A		1	12/01/17 16:20	C7L0001	CK72927
MCPA	ND (2.36)		8151A		1	12/01/17 16:20	C7L0001	CK72927
MCPP	ND (2.38)		8151A		1	12/01/17 16:20	C7L0001	CK72927

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*124 %*		*30-150*
Surrogate: DCAA [2C]	*120 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
1,2-Dichlorobenzene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
1,3-Dichlorobenzene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
1,4-Dichlorobenzene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2,4,5-Trichlorophenol	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2,4,6-Trichlorophenol	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2,4-Dichlorophenol	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2,4-Dimethylphenol	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2,4-Dinitrophenol	ND (1.79)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2,4-Dinitrotoluene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2,6-Dinitrotoluene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2-Chloronaphthalene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2-Chlorophenol	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2-Methylnaphthalene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2-Methylphenol	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
2-Nitrophenol	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
3,3′-Dichlorobenzidine	ND (0.714)		8270D		1	11/30/17 1:07	C7K0433	CK72909
3+4-Methylphenol	ND (0.714)		8270D		1	11/30/17 1:07	C7K0433	CK72909
4-Bromophenyl-phenylether	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
4-Chloroaniline	ND (0.714)		8270D		1	11/30/17 1:07	C7K0433	CK72909
4-Nitrophenol	ND (1.79)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Acenaphthene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Acenaphthylene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Acetophenone	ND (0.714)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Aniline	ND (1.79)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Anthracene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Azobenzene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Benzo(a)anthracene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Benzo(a)pyrene	ND (0.179)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Benzo(b)fluoranthene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Benzo(g,h,i)perylene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Benzo(k)fluoranthene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
bis(2-Chloroethyl)ether	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
bis(2-chloroisopropyl)Ether	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Butylbenzylphthalate	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Chrysene	ND (0.179)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Dibenzo(a,h)Anthracene	ND (0.179)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Dibenzofuran	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Diethylphthalate	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Dimethylphthalate	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Di-n-butylphthalate	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Di-n-octylphthalate	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Fluoranthene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Fluorene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Hexachlorobenzene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Hexachlorobutadiene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Hexachloroethane	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Isophorone	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Naphthalene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Nitrobenzene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
N-Nitrosodimethylamine	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Pentachlorophenol	ND (1.79)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Phenanthrene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Phenol	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909
Pyrene	ND (0.356)		8270D		1	11/30/17 1:07	C7K0433	CK72909

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*94 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*81 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*87 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*80 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*89 %*		*30-130*				
Surrogate: Phenol-d6		*81 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*90 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (200)		9060		1	EEB	12/01/17 20:54	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.46)		6020A		20	NAR	11/29/17 16:32	2.27	100	CK72844
Arsenic	**5.07** (2.29)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844
Barium	**2.66** (2.29)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844
Beryllium	**0.43** (0.10)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844
Cadmium	ND (0.46)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844
Chromium	**1.19** (0.92)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844
Lead	ND (4.59)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844
Mercury	ND (0.031)		7471B		1	MJV	11/29/17 14:10	0.67	40	CK72845
Nickel	ND (2.29)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844
Selenium	ND (0.46)		6020A		20	NAR	11/29/17 16:32	2.27	100	CK72844
Silver	ND (0.46)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844
Thallium	ND (0.46)		6020A		20	NAR	11/29/17 16:32	2.27	100	CK72844
Vanadium	**0.93** (0.92)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844
Zinc	**17.1** (2.29)		6010C		1	KJK	11/29/17 13:03	2.27	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
1,4-Dioxane	ND (0.0854)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
2-Butanone	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
2-Chlorotoluene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
2-Hexanone	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
4-Chlorotoluene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
4-Methyl-2-Pentanone	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Acetone	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Benzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Bromobenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Bromochloromethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Bromoform	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Bromomethane	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Carbon Disulfide	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Chlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Chloroethane	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Chloroform	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Chloromethane	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Dibromochloromethane	ND (0.0017)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Dibromomethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Dichlorodifluoromethane	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Diethyl Ether	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Di-isopropyl ether	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Ethylbenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Isopropylbenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Methylene Chloride	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Naphthalene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
n-Butylbenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
n-Propylbenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
sec-Butylbenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Styrene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
tert-Butylbenzene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Tetrachloroethene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Tetrahydrofuran	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Toluene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Trichloroethene	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Vinyl Chloride	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Xylene O	ND (0.0043)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Xylene P,M	ND (0.0085)		8260B Low		1	11/29/17 21:14	C7K0446	CK72939
Xylenes (Total)	ND (0.0085)		8260B Low		1	11/29/17 21:14		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
4,4´-DDE	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
4,4´-DDT	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Aldrin	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
alpha-BHC	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
alpha-Chlordane	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
beta-BHC	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Chlordane (Total)	ND (0.0208)		8081B		1	11/29/17 18:36	C7K0434	CK72816
delta-BHC	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Dieldrin	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Endosulfan I	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Endosulfan II	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Endosulfan Sulfate	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Endrin	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Endrin Ketone	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	11/29/17 18:36	C7K0434	CK72816
gamma-Chlordane	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Heptachlor	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Heptachlor Epoxide	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Hexachlorobenzene	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816
Methoxychlor	ND (0.0026)		8081B		1	11/29/17 18:36	C7K0434	CK72816

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*41 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*44 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/30/17 11:36		CK72911
Aroclor 1221	ND (0.05)		8082A		1	11/30/17 11:36		CK72911
Aroclor 1232	ND (0.05)		8082A		1	11/30/17 11:36		CK72911
Aroclor 1242	ND (0.05)		8082A		1	11/30/17 11:36		CK72911
Aroclor 1248	ND (0.05)		8082A		1	11/30/17 11:36		CK72911
Aroclor 1254	ND (0.05)		8082A		1	11/30/17 11:36		CK72911
Aroclor 1260	ND (0.05)		8082A		1	11/30/17 11:36		CK72911
Aroclor 1262	ND (0.05)		8082A		1	11/30/17 11:36		CK72911
Aroclor 1268	ND (0.05)		8082A		1	11/30/17 11:36		CK72911

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*102 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/01/17 16:55	C7L0001	CK72927
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/01/17 16:55	C7L0001	CK72927
2,4-D	ND (0.048)		8151A		1	12/01/17 16:55	C7L0001	CK72927
2,4-DB	ND (0.048)		8151A		1	12/01/17 16:55	C7L0001	CK72927
Dalapon	ND (0.046)		8151A		1	12/01/17 16:55	C7L0001	CK72927
Dicamba	ND (0.010)		8151A		1	12/01/17 16:55	C7L0001	CK72927
Dichlorprop	ND (0.048)		8151A		1	12/01/17 16:55	C7L0001	CK72927
Dinoseb	ND (0.048)		8151A		1	12/01/17 16:55	C7L0001	CK72927
MCPA	ND (2.35)		8151A		1	12/01/17 16:55	C7L0001	CK72927
MCPP	ND (2.38)		8151A		1	12/01/17 16:55	C7L0001	CK72927

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*120 %*		*30-150*
Surrogate: DCAA [2C]	*117 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
1,2-Dichlorobenzene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
1,3-Dichlorobenzene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
1,4-Dichlorobenzene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2,4,5-Trichlorophenol	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2,4,6-Trichlorophenol	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2,4-Dichlorophenol	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2,4-Dimethylphenol	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2,4-Dinitrophenol	ND (1.77)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2,4-Dinitrotoluene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2,6-Dinitrotoluene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2-Chloronaphthalene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2-Chlorophenol	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2-Methylnaphthalene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2-Methylphenol	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
2-Nitrophenol	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
3,3′-Dichlorobenzidine	ND (0.709)		8270D		1	11/30/17 1:41	C7K0433	CK72909
3+4-Methylphenol	ND (0.709)		8270D		1	11/30/17 1:41	C7K0433	CK72909
4-Bromophenyl-phenylether	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
4-Chloroaniline	ND (0.709)		8270D		1	11/30/17 1:41	C7K0433	CK72909
4-Nitrophenol	ND (1.77)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Acenaphthene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Acenaphthylene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Acetophenone	ND (0.709)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Aniline	ND (1.77)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Anthracene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Azobenzene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Benzo(a)anthracene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Benzo(a)pyrene	ND (0.177)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Benzo(b)fluoranthene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Benzo(g,h,i)perylene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Benzo(k)fluoranthene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
bis(2-Chloroethyl)ether	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
bis(2-chloroisopropyl)Ether	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Butylbenzylphthalate	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Chrysene	ND (0.177)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Dibenzo(a,h)Anthracene	ND (0.177)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Dibenzofuran	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Diethylphthalate	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Dimethylphthalate	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Di-n-butylphthalate	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Di-n-octylphthalate	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Fluoranthene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Fluorene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Hexachlorobenzene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Hexachlorobutadiene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Hexachloroethane	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Isophorone	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Naphthalene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Nitrobenzene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
N-Nitrosodimethylamine	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Pentachlorophenol	ND (1.77)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Phenanthrene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Phenol	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909
Pyrene	ND (0.354)		8270D		1	11/30/17 1:41	C7K0433	CK72909

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*82 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*102 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*88 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*88 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*88 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*91 %*		*30-130*				
Surrogate: Phenol-d6		*91 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*102 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (240)		9060		1	DEL	12/01/17 21:44	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.42)		6020A		20	NAR	11/29/17 16:38	2.5	100	CK72844
Arsenic	**4.08** (2.09)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844
Barium	**2.67** (2.09)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844
Beryllium	**0.50** (0.09)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844
Cadmium	ND (0.42)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844
Chromium	**1.23** (0.84)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844
Lead	ND (4.18)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844
Mercury	ND (0.031)		7471B		1	MJV	11/29/17 14:12	0.66	40	CK72845
Nickel	ND (2.09)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844
Selenium	ND (0.42)		6020A		20	NAR	11/29/17 16:38	2.5	100	CK72844
Silver	ND (0.42)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844
Thallium	ND (0.42)		6020A		20	NAR	11/29/17 16:38	2.5	100	CK72844
Vanadium	ND (0.84)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844
Zinc	**15.1** (2.09)		6010C		1	KJK	11/29/17 13:07	2.5	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
1,4-Dioxane	ND (0.100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
2-Butanone	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
2-Chlorotoluene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
2-Hexanone	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
4-Chlorotoluene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
4-Methyl-2-Pentanone	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Acetone	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Benzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Bromobenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Bromochloromethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Bromoform	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Bromomethane	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Carbon Disulfide	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Chlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Chloroethane	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Chloroform	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Chloromethane	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Dibromochloromethane	ND (0.0020)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Dibromomethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Dichlorodifluoromethane	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Diethyl Ether	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Di-isopropyl ether	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Ethylbenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Isopropylbenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Methylene Chloride	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Naphthalene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
n-Butylbenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
n-Propylbenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
sec-Butylbenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Styrene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
tert-Butylbenzene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Tetrachloroethene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Tetrahydrofuran	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Toluene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Trichloroethene	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Vinyl Chloride	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Xylene O	ND (0.0050)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Xylene P,M	ND (0.0100)		8260B Low		1	11/29/17 21:39	C7K0446	CK72939
Xylenes (Total)	ND (0.0100)		8260B Low		1	11/29/17 21:39		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*107 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*103 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
4,4´-DDE	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
4,4´-DDT	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Aldrin	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
alpha-BHC	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
alpha-Chlordane	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
beta-BHC	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Chlordane (Total)	ND (0.0213)		8081B		1	11/29/17 19:05	C7K0434	CK72816
delta-BHC	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Dieldrin	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Endosulfan I	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Endosulfan II	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Endosulfan Sulfate	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Endrin	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Endrin Ketone	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	11/29/17 19:05	C7K0434	CK72816
gamma-Chlordane	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Heptachlor	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Heptachlor Epoxide	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Hexachlorobenzene	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816
Methoxychlor	ND (0.0027)		8081B		1	11/29/17 19:05	C7K0434	CK72816

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*72 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*38 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*41 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/30/17 11:54		CK72911
Aroclor 1221	ND (0.05)		8082A		1	11/30/17 11:54		CK72911
Aroclor 1232	ND (0.05)		8082A		1	11/30/17 11:54		CK72911
Aroclor 1242	ND (0.05)		8082A		1	11/30/17 11:54		CK72911
Aroclor 1248	ND (0.05)		8082A		1	11/30/17 11:54		CK72911
Aroclor 1254	ND (0.05)		8082A		1	11/30/17 11:54		CK72911
Aroclor 1260	ND (0.05)		8082A		1	11/30/17 11:54		CK72911
Aroclor 1262	ND (0.05)		8082A		1	11/30/17 11:54		CK72911
Aroclor 1268	ND (0.05)		8082A		1	11/30/17 11:54		CK72911

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*87 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*96 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*101 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 10.5
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.009)		8151A		1	12/01/17 17:31	C7L0001	CK72927
2,4,5-TP (Silvex)	ND (0.009)		8151A		1	12/01/17 17:31	C7L0001	CK72927
2,4-D	ND (0.047)		8151A		1	12/01/17 17:31	C7L0001	CK72927
2,4-DB	ND (0.047)		8151A		1	12/01/17 17:31	C7L0001	CK72927
Dalapon	ND (0.045)		8151A		1	12/01/17 17:31	C7L0001	CK72927
Dicamba	ND (0.009)		8151A		1	12/01/17 17:31	C7L0001	CK72927
Dichlorprop	ND (0.047)		8151A		1	12/01/17 17:31	C7L0001	CK72927
Dinoseb	ND (0.047)		8151A		1	12/01/17 17:31	C7L0001	CK72927
MCPA	ND (2.31)		8151A		1	12/01/17 17:31	C7L0001	CK72927
MCPP	ND (2.34)		8151A		1	12/01/17 17:31	C7L0001	CK72927

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*121 %*		*30-150*
Surrogate: DCAA [2C]	*113 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
1,2-Dichlorobenzene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
1,3-Dichlorobenzene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
1,4-Dichlorobenzene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2,4,5-Trichlorophenol	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2,4,6-Trichlorophenol	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2,4-Dichlorophenol	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2,4-Dimethylphenol	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2,4-Dinitrophenol	ND (1.77)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2,4-Dinitrotoluene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2,6-Dinitrotoluene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2-Chloronaphthalene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2-Chlorophenol	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2-Methylnaphthalene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2-Methylphenol	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
2-Nitrophenol	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
3,3′-Dichlorobenzidine	ND (0.706)		8270D		1	11/30/17 2:16	C7K0433	CK72909
3+4-Methylphenol	ND (0.706)		8270D		1	11/30/17 2:16	C7K0433	CK72909
4-Bromophenyl-phenylether	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
4-Chloroaniline	ND (0.706)		8270D		1	11/30/17 2:16	C7K0433	CK72909
4-Nitrophenol	ND (1.77)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Acenaphthene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Acenaphthylene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Acetophenone	ND (0.706)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Aniline	ND (1.77)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Anthracene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Azobenzene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Benzo(a)anthracene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Benzo(a)pyrene	ND (0.177)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Benzo(b)fluoranthene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Benzo(g,h,i)perylene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Benzo(k)fluoranthene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
bis(2-Chloroethyl)ether	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
bis(2-chloroisopropyl)Ether	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Butylbenzylphthalate	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Chrysene	ND (0.177)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Dibenzo(a,h)Anthracene	ND (0.177)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Dibenzofuran	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Diethylphthalate	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Dimethylphthalate	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Di-n-butylphthalate	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Di-n-octylphthalate	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Fluoranthene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Fluorene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Hexachlorobenzene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Hexachlorobutadiene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Hexachloroethane	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Isophorone	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Naphthalene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Nitrobenzene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
N-Nitrosodimethylamine	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Pentachlorophenol	ND (1.77)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Phenanthrene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Phenol	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909
Pyrene	ND (0.352)		8270D		1	11/30/17 2:16	C7K0433	CK72909

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*79 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*104 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*85 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*88 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*84 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*89 %*		*30-130*				
Surrogate: Phenol-d6		*86 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*106 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (200)		9060		1	EEB	12/01/17 22:00	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.46)		6020A		20	NAR	11/29/17 16:44	2.26	100	CK72844
Arsenic	**2.87** (2.30)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844
Barium	**3.36** (2.30)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844
Beryllium	**0.41** (0.10)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844
Cadmium	ND (0.46)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844
Chromium	**1.01** (0.92)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844
Lead	**7.05** (4.60)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844
Mercury	ND (0.031)		7471B		1	MJV	11/29/17 14:14	0.66	40	CK72845
Nickel	ND (2.30)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844
Selenium	ND (0.46)		6020A		20	NAR	11/29/17 16:44	2.26	100	CK72844
Silver	ND (0.46)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844
Thallium	ND (0.46)		6020A		20	NAR	11/29/17 16:44	2.26	100	CK72844
Vanadium	ND (0.92)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844
Zinc	**15.5** (2.30)		6010C		1	KJK	11/29/17 13:23	2.26	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
1,4-Dioxane	ND (0.0838)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
2-Butanone	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
2-Chlorotoluene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
2-Hexanone	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
4-Chlorotoluene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
4-Methyl-2-Pentanone	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Acetone	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Benzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Bromobenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Bromochloromethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Bromoform	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Bromomethane	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Carbon Disulfide	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Chlorobenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Chloroethane	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Chloroform	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Chloromethane	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Dibromochloromethane	ND (0.0017)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Dibromomethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Dichlorodifluoromethane	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Diethyl Ether	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Di-isopropyl ether	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Ethylbenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Isopropylbenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Methylene Chloride	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Naphthalene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
n-Butylbenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
n-Propylbenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
sec-Butylbenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Styrene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
tert-Butylbenzene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Tetrachloroethene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Tetrahydrofuran	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Toluene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Trichloroethene	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Vinyl Chloride	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Xylene O	ND (0.0042)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Xylene P,M	ND (0.0084)		8260B Low		1	11/29/17 22:05	C7K0446	CK72939
Xylenes (Total)	ND (0.0084)		8260B Low		1	11/29/17 22:05		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*109 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 19.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
4,4´-DDE	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
4,4´-DDT	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Aldrin	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
alpha-BHC	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
alpha-Chlordane	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
beta-BHC	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Chlordane (Total)	ND (0.0209)		8081B		1	11/29/17 19:33	C7K0434	CK72816
delta-BHC	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Dieldrin	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Endosulfan I	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Endosulfan II	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Endosulfan Sulfate	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Endrin	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Endrin Ketone	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	11/29/17 19:33	C7K0434	CK72816
gamma-Chlordane	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Heptachlor	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Heptachlor Epoxide	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Hexachlorobenzene	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816
Methoxychlor	ND (0.0026)		8081B		1	11/29/17 19:33	C7K0434	CK72816

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*37 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*39 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/30/17 12:13		CK72911
Aroclor 1221	ND (0.05)		8082A		1	11/30/17 12:13		CK72911
Aroclor 1232	ND (0.05)		8082A		1	11/30/17 12:13		CK72911
Aroclor 1242	ND (0.05)		8082A		1	11/30/17 12:13		CK72911
Aroclor 1248	ND (0.05)		8082A		1	11/30/17 12:13		CK72911
Aroclor 1254	ND (0.05)		8082A		1	11/30/17 12:13		CK72911
Aroclor 1260	ND (0.05)		8082A		1	11/30/17 12:13		CK72911
Aroclor 1262	ND (0.05)		8082A		1	11/30/17 12:13		CK72911
Aroclor 1268	ND (0.05)		8082A		1	11/30/17 12:13		CK72911

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*102 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*94 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*96 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*99 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 10.5
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.009)		8151A		1	12/01/17 18:05	C7L0001	CK72927
2,4,5-TP (Silvex)	ND (0.009)		8151A		1	12/01/17 18:05	C7L0001	CK72927
2,4-D	ND (0.046)		8151A		1	12/01/17 18:05	C7L0001	CK72927
2,4-DB	ND (0.047)		8151A		1	12/01/17 18:05	C7L0001	CK72927
Dalapon	ND (0.045)		8151A		1	12/01/17 18:05	C7L0001	CK72927
Dicamba	ND (0.009)		8151A		1	12/01/17 18:05	C7L0001	CK72927
Dichlorprop	ND (0.046)		8151A		1	12/01/17 18:05	C7L0001	CK72927
Dinoseb	ND (0.047)		8151A		1	12/01/17 18:05	C7L0001	CK72927
MCPA	ND (2.30)		8151A		1	12/01/17 18:05	C7L0001	CK72927
MCPP	ND (2.32)		8151A		1	12/01/17 18:05	C7L0001	CK72927

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*118 %*		*30-150*
Surrogate: DCAA [2C]	*112 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
1,2-Dichlorobenzene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
1,3-Dichlorobenzene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
1,4-Dichlorobenzene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2,4,5-Trichlorophenol	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2,4,6-Trichlorophenol	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2,4-Dichlorophenol	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2,4-Dimethylphenol	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2,4-Dinitrophenol	ND (1.71)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2,4-Dinitrotoluene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2,6-Dinitrotoluene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2-Chloronaphthalene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2-Chlorophenol	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2-Methylnaphthalene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2-Methylphenol	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
2-Nitrophenol	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
3,3′-Dichlorobenzidine	ND (0.684)		8270D		1	11/29/17 19:45	C7K0432	CK72909
3+4-Methylphenol	ND (0.684)		8270D		1	11/29/17 19:45	C7K0432	CK72909
4-Bromophenyl-phenylether	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
4-Chloroaniline	ND (0.684)		8270D		1	11/29/17 19:45	C7K0432	CK72909
4-Nitrophenol	ND (1.71)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Acenaphthene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Acenaphthylene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Acetophenone	ND (0.684)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Aniline	ND (1.71)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Anthracene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Azobenzene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Benzo(a)anthracene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Benzo(a)pyrene	ND (0.171)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Benzo(b)fluoranthene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Benzo(g,h,i)perylene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Benzo(k)fluoranthene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
bis(2-Chloroethyl)ether	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
bis(2-chloroisopropyl)Ether	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Butylbenzylphthalate	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Chrysene	ND (0.171)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Dibenzo(a,h)Anthracene	ND (0.171)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Dibenzofuran	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Diethylphthalate	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Dimethylphthalate	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Di-n-butylphthalate	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Di-n-octylphthalate	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Fluoranthene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Fluorene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Hexachlorobenzene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Hexachlorobutadiene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Hexachloroethane	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Isophorone	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Naphthalene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Nitrobenzene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
N-Nitrosodimethylamine	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Pentachlorophenol	ND (1.71)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Phenanthrene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Phenol	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909
Pyrene	ND (0.341)		8270D		1	11/29/17 19:45	C7K0432	CK72909

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*82 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*79 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*90 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*89 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*83 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*82 %*		*30-130*				
Surrogate: Phenol-d6		*91 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*85 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**319** (200)		9060		1	EEB	12/01/17 22:50	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.43)		6020A		20	NAR	11/29/17 16:50	2.43	100	CK72844
Arsenic	**3.87** (2.14)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844
Barium	**2.52** (2.14)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844
Beryllium	**0.41** (0.09)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844
Cadmium	ND (0.43)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844
Chromium	**1.16** (0.85)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844
Lead	ND (4.27)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844
Mercury	ND (0.027)		7471B		1	MJV	11/29/17 14:16	0.76	40	CK72845
Nickel	ND (2.14)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844
Selenium	ND (0.43)		6020A		20	NAR	11/29/17 16:50	2.43	100	CK72844
Silver	ND (0.43)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844
Thallium	ND (0.43)		6020A		20	NAR	11/29/17 16:50	2.43	100	CK72844
Vanadium	ND (0.85)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844
Zinc	**14.9** (2.14)		6010C		1	KJK	11/29/17 13:27	2.43	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,1,1-Trichloroethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,1,2-Trichloroethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,1-Dichloroethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,1-Dichloroethene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,1-Dichloropropene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,2,3-Trichlorobenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,2,3-Trichloropropane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,2,4-Trichlorobenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,2,4-Trimethylbenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,2-Dibromo-3-Chloropropane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,2-Dibromoethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,2-Dichlorobenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,2-Dichloroethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,2-Dichloropropane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,3,5-Trimethylbenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,3-Dichlorobenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,3-Dichloropropane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,4-Dichlorobenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
1,4-Dioxane	ND (0.0911)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
2,2-Dichloropropane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
2-Butanone	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
2-Chlorotoluene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
2-Hexanone	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
4-Chlorotoluene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
4-Isopropyltoluene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
4-Methyl-2-Pentanone	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Acetone	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Benzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Bromobenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Bromochloromethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Bromoform	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Bromomethane	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Carbon Disulfide	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Carbon Tetrachloride	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Chlorobenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Chloroethane	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Chloroform	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Chloromethane	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
cis-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
cis-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Dibromochloromethane	ND (0.0018)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Dibromomethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Dichlorodifluoromethane	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Diethyl Ether	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Di-isopropyl ether	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Ethyl tertiary-butyl ether	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Ethylbenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Hexachlorobutadiene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Isopropylbenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Methyl tert-Butyl Ether	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Methylene Chloride	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Naphthalene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
n-Butylbenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
n-Propylbenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
sec-Butylbenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Styrene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
tert-Butylbenzene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Tertiary-amyl methyl ether	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Tetrachloroethene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Tetrahydrofuran	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Toluene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
trans-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Trichloroethene	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Trichlorofluoromethane	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Vinyl Chloride	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Xylene O	ND (0.0046)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Xylene P,M	ND (0.0091)		8260B Low		1	11/29/17 22:30	C7K0446	CK72939
Xylenes (Total)	ND (0.0091)		8260B Low		1	11/29/17 22:30		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*109 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*106 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
4,4´-DDE	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
4,4´-DDT	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Aldrin	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
alpha-BHC	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
alpha-Chlordane	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
beta-BHC	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Chlordane (Total)	ND (0.0211)		8081B		1	11/29/17 20:02	C7K0434	CK72816
delta-BHC	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Dieldrin	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Endosulfan I	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Endosulfan II	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Endosulfan Sulfate	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Endrin	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Endrin Ketone	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	11/29/17 20:02	C7K0434	CK72816
gamma-Chlordane	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Heptachlor	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Heptachlor Epoxide	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Hexachlorobenzene	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816
Methoxychlor	ND (0.0026)		8081B		1	11/29/17 20:02	C7K0434	CK72816

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*62 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*31 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*32 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/30/17 12:32		CK72911
Aroclor 1221	ND (0.05)		8082A		1	11/30/17 12:32		CK72911
Aroclor 1232	ND (0.05)		8082A		1	11/30/17 12:32		CK72911
Aroclor 1242	ND (0.05)		8082A		1	11/30/17 12:32		CK72911
Aroclor 1248	ND (0.05)		8082A		1	11/30/17 12:32		CK72911
Aroclor 1254	ND (0.05)		8082A		1	11/30/17 12:32		CK72911
Aroclor 1260	ND (0.05)		8082A		1	11/30/17 12:32		CK72911
Aroclor 1262	ND (0.05)		8082A		1	11/30/17 12:32		CK72911
Aroclor 1268	ND (0.05)		8082A		1	11/30/17 12:32		CK72911

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*106 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*104 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*107 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/01/17 18:40	C7L0001	CK72927
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/01/17 18:40	C7L0001	CK72927
2,4-D	ND (0.048)		8151A		1	12/01/17 18:40	C7L0001	CK72927
2,4-DB	ND (0.049)		8151A		1	12/01/17 18:40	C7L0001	CK72927
Dalapon	ND (0.047)		8151A		1	12/01/17 18:40	C7L0001	CK72927
Dicamba	ND (0.010)		8151A		1	12/01/17 18:40	C7L0001	CK72927
Dichlorprop	ND (0.048)		8151A		1	12/01/17 18:40	C7L0001	CK72927
Dinoseb	ND (0.049)		8151A		1	12/01/17 18:40	C7L0001	CK72927
MCPA	ND (2.39)		8151A		1	12/01/17 18:40	C7L0001	CK72927
MCPP	ND (2.42)		8151A		1	12/01/17 18:40	C7L0001	CK72927

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*120 %*		*30-150*
Surrogate: DCAA [2C]	*110 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
1,2-Dichlorobenzene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
1,3-Dichlorobenzene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
1,4-Dichlorobenzene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2,4,5-Trichlorophenol	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2,4,6-Trichlorophenol	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2,4-Dichlorophenol	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2,4-Dimethylphenol	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2,4-Dinitrophenol	ND (1.76)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2,4-Dinitrotoluene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2,6-Dinitrotoluene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2-Chloronaphthalene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2-Chlorophenol	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2-Methylnaphthalene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2-Methylphenol	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
2-Nitrophenol	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
3,3′-Dichlorobenzidine	ND (0.702)		8270D		1	11/29/17 20:19	C7K0432	CK72909
3+4-Methylphenol	ND (0.702)		8270D		1	11/29/17 20:19	C7K0432	CK72909
4-Bromophenyl-phenylether	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
4-Chloroaniline	ND (0.702)		8270D		1	11/29/17 20:19	C7K0432	CK72909
4-Nitrophenol	ND (1.76)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Acenaphthene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Acenaphthylene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Acetophenone	ND (0.702)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Aniline	ND (1.76)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Anthracene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Azobenzene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Benzo(a)anthracene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Benzo(a)pyrene	ND (0.176)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Benzo(b)fluoranthene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Benzo(g,h,i)perylene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Benzo(k)fluoranthene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
bis(2-Chloroethyl)ether	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
bis(2-chloroisopropyl)Ether	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Butylbenzylphthalate	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Chrysene	ND (0.176)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Dibenzo(a,h)Anthracene	ND (0.176)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Dibenzofuran	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Diethylphthalate	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Dimethylphthalate	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Di-n-butylphthalate	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Di-n-octylphthalate	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Fluoranthene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Fluorene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Hexachlorobenzene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Hexachlorobutadiene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Hexachloroethane	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Isophorone	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Naphthalene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Nitrobenzene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
N-Nitrosodimethylamine	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Pentachlorophenol	ND (1.76)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Phenanthrene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Phenol	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909
Pyrene	ND (0.350)		8270D		1	11/29/17 20:19	C7K0432	CK72909

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*71 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*82 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*83 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*78 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*77 %*		*30-130*				
Surrogate: Phenol-d6		*84 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*79 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**X* 1090** (200)		9060		1	EEB	12/01/17 23:07	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.46)		6020A		20	NAR	11/29/17 16:55	2.24	100	CK72844
Arsenic	**3.61** (2.32)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844
Barium	**2.43** (2.32)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844
Beryllium	**0.40** (0.10)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844
Cadmium	ND (0.46)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844
Chromium	**1.74** (0.93)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844
Lead	ND (4.63)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844
Mercury	ND (0.034)		7471B		1	MJV	11/29/17 14:22	0.6	40	CK72845
Nickel	ND (2.32)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844
Selenium	ND (0.46)		6020A		20	NAR	11/29/17 16:55	2.24	100	CK72844
Silver	ND (0.46)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844
Thallium	ND (0.46)		6020A		20	NAR	11/29/17 16:55	2.24	100	CK72844
Vanadium	ND (0.93)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844
Zinc	**12.4** (2.32)		6010C		1	KJK	11/29/17 13:31	2.24	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
1,4-Dioxane	ND (0.0851)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
2-Butanone	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
2-Chlorotoluene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
2-Hexanone	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
4-Chlorotoluene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
4-Methyl-2-Pentanone	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Acetone	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Benzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Bromobenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Bromochloromethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Bromoform	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Bromomethane	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Carbon Disulfide	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Chlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Chloroethane	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Chloroform	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Chloromethane	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Dibromochloromethane	ND (0.0017)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Dibromomethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Dichlorodifluoromethane	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Diethyl Ether	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Di-isopropyl ether	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Ethylbenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Isopropylbenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Methylene Chloride	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Naphthalene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
n-Butylbenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
n-Propylbenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
sec-Butylbenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Styrene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
tert-Butylbenzene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Tetrachloroethene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Tetrahydrofuran	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Toluene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Trichloroethene	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Vinyl Chloride	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Xylene O	ND (0.0043)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Xylene P,M	ND (0.0085)		8260B Low		1	11/29/17 22:55	C7K0446	CK72939
Xylenes (Total)	ND (0.0085)		8260B Low		1	11/29/17 22:55		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*109 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*105 %*		*70-130*
Surrogate: Toluene-d8	*103 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
4,4´-DDE	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
4,4´-DDT	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Aldrin	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
alpha-BHC	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
alpha-Chlordane	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
beta-BHC	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Chlordane (Total)	ND (0.0215)		8081B		1	11/29/17 20:30	C7K0434	CK72816
delta-BHC	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Dieldrin	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Endosulfan I	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Endosulfan II	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Endosulfan Sulfate	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Endrin	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Endrin Ketone	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	11/29/17 20:30	C7K0434	CK72816
gamma-Chlordane	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Heptachlor	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Heptachlor Epoxide	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Hexachlorobenzene	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816
Methoxychlor	ND (0.0027)		8081B		1	11/29/17 20:30	C7K0434	CK72816

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*66 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*35 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*38 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/30/17 12:52		CK72911
Aroclor 1221	ND (0.05)		8082A		1	11/30/17 12:52		CK72911
Aroclor 1232	ND (0.05)		8082A		1	11/30/17 12:52		CK72911
Aroclor 1242	ND (0.05)		8082A		1	11/30/17 12:52		CK72911
Aroclor 1248	ND (0.05)		8082A		1	11/30/17 12:52		CK72911
Aroclor 1254	ND (0.05)		8082A		1	11/30/17 12:52		CK72911
Aroclor 1260	ND (0.05)		8082A		1	11/30/17 12:52		CK72911
Aroclor 1262	ND (0.05)		8082A		1	11/30/17 12:52		CK72911
Aroclor 1268	ND (0.05)		8082A		1	11/30/17 12:52		CK72911

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*99 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*93 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 10.4
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.009)		8151A		1	12/01/17 19:14	C7L0001	CK72927
2,4,5-TP (Silvex)	ND (0.009)		8151A		1	12/01/17 19:14	C7L0001	CK72927
2,4-D	ND (0.047)		8151A		1	12/01/17 19:14	C7L0001	CK72927
2,4-DB	ND (0.047)		8151A		1	12/01/17 19:14	C7L0001	CK72927
Dalapon	ND (0.045)		8151A		1	12/01/17 19:14	C7L0001	CK72927
Dicamba	ND (0.009)		8151A		1	12/01/17 19:14	C7L0001	CK72927
Dichlorprop	ND (0.047)		8151A		1	12/01/17 19:14	C7L0001	CK72927
Dinoseb	ND (0.047)		8151A		1	12/01/17 19:14	C7L0001	CK72927
MCPA	ND (2.32)		8151A		1	12/01/17 19:14	C7L0001	CK72927
MCPP	ND (2.35)		8151A		1	12/01/17 19:14	C7L0001	CK72927

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*126 %*		*30-150*
Surrogate: DCAA [2C]	*119 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
1,2-Dichlorobenzene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
1,3-Dichlorobenzene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
1,4-Dichlorobenzene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2,4,5-Trichlorophenol	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2,4,6-Trichlorophenol	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2,4-Dichlorophenol	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2,4-Dimethylphenol	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2,4-Dinitrophenol	ND (1.77)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2,4-Dinitrotoluene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2,6-Dinitrotoluene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2-Chloronaphthalene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2-Chlorophenol	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2-Methylnaphthalene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2-Methylphenol	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
2-Nitrophenol	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
3,3′-Dichlorobenzidine	ND (0.706)		8270D		1	11/29/17 20:53	C7K0432	CK72909
3+4-Methylphenol	ND (0.706)		8270D		1	11/29/17 20:53	C7K0432	CK72909
4-Bromophenyl-phenylether	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
4-Chloroaniline	ND (0.706)		8270D		1	11/29/17 20:53	C7K0432	CK72909
4-Nitrophenol	ND (1.77)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Acenaphthene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Acenaphthylene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Acetophenone	ND (0.706)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Aniline	ND (1.77)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Anthracene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Azobenzene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Benzo(a)anthracene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Benzo(a)pyrene	ND (0.177)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Benzo(b)fluoranthene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Benzo(g,h,i)perylene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Benzo(k)fluoranthene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
bis(2-Chloroethyl)ether	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
bis(2-chloroisopropyl)Ether	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Butylbenzylphthalate	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Chrysene	ND (0.177)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Dibenzo(a,h)Anthracene	ND (0.177)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Dibenzofuran	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Diethylphthalate	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Dimethylphthalate	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Di-n-butylphthalate	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Di-n-octylphthalate	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Fluoranthene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Fluorene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Hexachlorobenzene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Hexachlorobutadiene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Hexachloroethane	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Isophorone	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Naphthalene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Nitrobenzene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
N-Nitrosodimethylamine	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Pentachlorophenol	ND (1.77)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Phenanthrene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Phenol	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909
Pyrene	ND (0.353)		8270D		1	11/29/17 20:53	C7K0432	CK72909

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*83 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*77 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*86 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*95 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*83 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*84 %*		*30-130*				
Surrogate: Phenol-d6		*87 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*86 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (200)		9060		1	EEB	12/01/17 23:23	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.47)		6020A		20	NAR	11/29/17 17:13	2.22	100	CK72844
Arsenic	**5.30** (2.34)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844
Barium	**3.06** (2.34)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844
Beryllium	**0.43** (0.10)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844
Cadmium	ND (0.47)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844
Chromium	**1.11** (0.94)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844
Lead	**9.00** (4.68)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844
Mercury	ND (0.028)		7471B		1	MJV	11/29/17 14:24	0.74	40	CK72845
Nickel	ND (2.34)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844
Selenium	ND (0.47)		6020A		20	NAR	11/29/17 17:13	2.22	100	CK72844
Silver	ND (0.47)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844
Thallium	ND (0.47)		6020A		20	NAR	11/29/17 17:13	2.22	100	CK72844
Vanadium	**1.72** (0.94)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844
Zinc	**16.5** (2.34)		6010C		1	KJK	11/29/17 13:36	2.22	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
1,4-Dioxane	ND (0.0999)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
2-Butanone	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
2-Chlorotoluene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
2-Hexanone	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
4-Chlorotoluene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
4-Methyl-2-Pentanone	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Acetone	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Benzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Bromobenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Bromochloromethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Bromoform	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Bromomethane	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Carbon Disulfide	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Chlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Chloroethane	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Chloroform	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Chloromethane	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Dibromochloromethane	ND (0.0020)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Dibromomethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Dichlorodifluoromethane	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Diethyl Ether	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Di-isopropyl ether	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Ethylbenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Isopropylbenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Methylene Chloride	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Naphthalene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
n-Butylbenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
n-Propylbenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
sec-Butylbenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Styrene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
tert-Butylbenzene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Tetrachloroethene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Tetrahydrofuran	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Toluene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Trichloroethene	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Vinyl Chloride	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Xylene O	ND (0.0050)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Xylene P,M	ND (0.0100)		8260B Low		1	11/29/17 23:20	C7K0446	CK72939
Xylenes (Total)	ND (0.0100)		8260B Low		1	11/29/17 23:20		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*109 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*105 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 20.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
4,4´-DDE	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
4,4´-DDT	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Aldrin	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
alpha-BHC	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
alpha-Chlordane	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
beta-BHC	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Chlordane (Total)	ND (0.0201)		8081B		1	11/29/17 20:59	C7K0434	CK72816
delta-BHC	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Dieldrin	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Endosulfan I	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Endosulfan II	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Endosulfan Sulfate	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Endrin	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Endrin Ketone	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	11/29/17 20:59	C7K0434	CK72816
gamma-Chlordane	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Heptachlor	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Heptachlor Epoxide	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Hexachlorobenzene	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816
Methoxychlor	ND (0.0025)		8081B		1	11/29/17 20:59	C7K0434	CK72816

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*68 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*38 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*41 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/30/17 13:11		CK72911
Aroclor 1221	ND (0.05)		8082A		1	11/30/17 13:11		CK72911
Aroclor 1232	ND (0.05)		8082A		1	11/30/17 13:11		CK72911
Aroclor 1242	ND (0.05)		8082A		1	11/30/17 13:11		CK72911
Aroclor 1248	ND (0.05)		8082A		1	11/30/17 13:11		CK72911
Aroclor 1254	ND (0.05)		8082A		1	11/30/17 13:11		CK72911
Aroclor 1260	ND (0.05)		8082A		1	11/30/17 13:11		CK72911
Aroclor 1262	ND (0.05)		8082A		1	11/30/17 13:11		CK72911
Aroclor 1268	ND (0.05)		8082A		1	11/30/17 13:11		CK72911

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*104 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*103 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/01/17 19:49	C7L0001	CK72927
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/01/17 19:49	C7L0001	CK72927
2,4-D	ND (0.047)		8151A		1	12/01/17 19:49	C7L0001	CK72927
2,4-DB	ND (0.048)		8151A		1	12/01/17 19:49	C7L0001	CK72927
Dalapon	ND (0.046)		8151A		1	12/01/17 19:49	C7L0001	CK72927
Dicamba	ND (0.009)		8151A		1	12/01/17 19:49	C7L0001	CK72927
Dichlorprop	ND (0.047)		8151A		1	12/01/17 19:49	C7L0001	CK72927
Dinoseb	ND (0.048)		8151A		1	12/01/17 19:49	C7L0001	CK72927
MCPA	ND (2.35)		8151A		1	12/01/17 19:49	C7L0001	CK72927
MCPP	ND (2.37)		8151A		1	12/01/17 19:49	C7L0001	CK72927

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*131 %*		*30-150*
Surrogate: DCAA [2C]	*125 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
1,2-Dichlorobenzene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
1,3-Dichlorobenzene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
1,4-Dichlorobenzene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2,4,5-Trichlorophenol	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2,4,6-Trichlorophenol	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2,4-Dichlorophenol	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2,4-Dimethylphenol	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2,4-Dinitrophenol	ND (1.65)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2,4-Dinitrotoluene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2,6-Dinitrotoluene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2-Chloronaphthalene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2-Chlorophenol	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2-Methylnaphthalene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2-Methylphenol	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
2-Nitrophenol	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
3,3′-Dichlorobenzidine	ND (0.658)		8270D		1	11/29/17 21:27	C7K0432	CK72909
3+4-Methylphenol	ND (0.658)		8270D		1	11/29/17 21:27	C7K0432	CK72909
4-Bromophenyl-phenylether	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
4-Chloroaniline	ND (0.658)		8270D		1	11/29/17 21:27	C7K0432	CK72909
4-Nitrophenol	ND (1.65)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Acenaphthene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Acenaphthylene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Acetophenone	ND (0.658)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Aniline	ND (1.65)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Anthracene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Azobenzene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Benzo(a)anthracene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Benzo(a)pyrene	ND (0.165)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Benzo(b)fluoranthene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Benzo(g,h,i)perylene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Benzo(k)fluoranthene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
bis(2-Chloroethyl)ether	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
bis(2-chloroisopropyl)Ether	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Butylbenzylphthalate	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Chrysene	ND (0.165)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Dibenzo(a,h)Anthracene	ND (0.165)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Dibenzofuran	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Diethylphthalate	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Dimethylphthalate	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Di-n-butylphthalate	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Di-n-octylphthalate	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Fluoranthene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Fluorene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Hexachlorobenzene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Hexachlorobutadiene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Hexachloroethane	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Isophorone	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Naphthalene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Nitrobenzene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
N-Nitrosodimethylamine	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Pentachlorophenol	ND (1.65)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Phenanthrene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Phenol	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909
Pyrene	ND (0.329)		8270D		1	11/29/17 21:27	C7K0432	CK72909

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*81 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*76 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*86 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*93 %*		*30-130*

CERTIFICATE OF ANALYSIS

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Percent Solids: 96
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*81 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*79 %*		*30-130*				
Surrogate: Phenol-d6		*86 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*90 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (171)		9060		1	DEL	12/07/17 3:31	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.52)		6020A		20	NAR	11/29/17 17:19	2	100	CK72844
Arsenic	**3.79** (2.61)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844
Barium	**3.05** (2.61)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844
Beryllium	**0.39** (0.11)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844
Cadmium	ND (0.52)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844
Chromium	**1.49** (1.04)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844
Lead	ND (5.22)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844
Mercury	ND (0.031)		7471B		1	MJV	11/29/17 14:26	0.66	40	CK72845
Nickel	ND (2.61)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844
Selenium	ND (0.52)		6020A		20	NAR	11/29/17 17:19	2	100	CK72844
Silver	ND (0.52)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844
Thallium	ND (0.52)		6020A		20	NAR	11/29/17 17:19	2	100	CK72844
Vanadium	ND (1.04)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844
Zinc	**15.7** (2.61)		6010C		1	KJK	11/29/17 13:39	2	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
1,4-Dioxane	ND (0.0869)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
2-Butanone	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
2-Chlorotoluene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
2-Hexanone	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
4-Chlorotoluene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
4-Methyl-2-Pentanone	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Acetone	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Benzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Bromobenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Bromochloromethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Bromoform	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Bromomethane	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Carbon Disulfide	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Chlorobenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Chloroethane	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Chloroform	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Chloromethane	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Dibromochloromethane	ND (0.0017)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Dibromomethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Diethyl Ether	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Di-isopropyl ether	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Ethylbenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Isopropylbenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Methylene Chloride	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Naphthalene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
n-Butylbenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
n-Propylbenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
sec-Butylbenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Styrene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
tert-Butylbenzene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Tetrachloroethene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Tetrahydrofuran	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Toluene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Trichloroethene	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Vinyl Chloride	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Xylene O	ND (0.0043)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Xylene P,M	ND (0.0087)		8260B Low		1	11/29/17 23:45	C7K0446	CK72939
Xylenes (Total)	ND (0.0087)		8260B Low		1	11/29/17 23:45		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*105 %*		*70-130*
Surrogate: Toluene-d8	*103 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
4,4´-DDE	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
4,4´-DDT	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Aldrin	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
alpha-BHC	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
alpha-Chlordane	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
beta-BHC	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Chlordane (Total)	ND (0.0212)		8081B		1	11/29/17 21:27	C7K0434	CK72816
delta-BHC	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Dieldrin	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Endosulfan I	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Endosulfan II	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Endosulfan Sulfate	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Endrin	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Endrin Ketone	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	11/29/17 21:27	C7K0434	CK72816
gamma-Chlordane	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Heptachlor	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Heptachlor Epoxide	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Hexachlorobenzene	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816
Methoxychlor	ND (0.0026)		8081B		1	11/29/17 21:27	C7K0434	CK72816

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*33 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*37 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/30/17 13:30		CK72911
Aroclor 1221	ND (0.05)		8082A		1	11/30/17 13:30		CK72911
Aroclor 1232	ND (0.05)		8082A		1	11/30/17 13:30		CK72911
Aroclor 1242	ND (0.05)		8082A		1	11/30/17 13:30		CK72911
Aroclor 1248	ND (0.05)		8082A		1	11/30/17 13:30		CK72911
Aroclor 1254	ND (0.05)		8082A		1	11/30/17 13:30		CK72911
Aroclor 1260	ND (0.05)		8082A		1	11/30/17 13:30		CK72911
Aroclor 1262	ND (0.05)		8082A		1	11/30/17 13:30		CK72911
Aroclor 1268	ND (0.05)		8082A		1	11/30/17 13:30		CK72911

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*104 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*102 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/01/17 20:23	C7L0001	CK72927
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/01/17 20:23	C7L0001	CK72927
2,4-D	ND (0.049)		8151A		1	12/01/17 20:23	C7L0001	CK72927
2,4-DB	ND (0.049)		8151A		1	12/01/17 20:23	C7L0001	CK72927
Dalapon	ND (0.047)		8151A		1	12/01/17 20:23	C7L0001	CK72927
Dicamba	ND (0.010)		8151A		1	12/01/17 20:23	C7L0001	CK72927
Dichlorprop	ND (0.049)		8151A		1	12/01/17 20:23	C7L0001	CK72927
Dinoseb	ND (0.049)		8151A		1	12/01/17 20:23	C7L0001	CK72927
MCPA	ND (2.40)		8151A		1	12/01/17 20:23	C7L0001	CK72927
MCPP	ND (2.43)		8151A		1	12/01/17 20:23	C7L0001	CK72927

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*134 %*		*30-150*
Surrogate: DCAA [2C]	*128 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
1,2-Dichlorobenzene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
1,3-Dichlorobenzene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
1,4-Dichlorobenzene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2,4,5-Trichlorophenol	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2,4,6-Trichlorophenol	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2,4-Dichlorophenol	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2,4-Dimethylphenol	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2,4-Dinitrophenol	ND (1.81)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2,4-Dinitrotoluene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2,6-Dinitrotoluene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2-Chloronaphthalene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2-Chlorophenol	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2-Methylnaphthalene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2-Methylphenol	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
2-Nitrophenol	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
3,3′-Dichlorobenzidine	ND (0.725)		8270D		1	11/29/17 22:01	C7K0432	CK72909
3+4-Methylphenol	ND (0.725)		8270D		1	11/29/17 22:01	C7K0432	CK72909
4-Bromophenyl-phenylether	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
4-Chloroaniline	ND (0.725)		8270D		1	11/29/17 22:01	C7K0432	CK72909
4-Nitrophenol	ND (1.81)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Acenaphthene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Acenaphthylene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Acetophenone	ND (0.725)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Aniline	ND (1.81)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Anthracene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Azobenzene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Benzo(a)anthracene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Benzo(a)pyrene	ND (0.181)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Benzo(b)fluoranthene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Benzo(g,h,i)perylene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Benzo(k)fluoranthene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
bis(2-Chloroethyl)ether	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
bis(2-chloroisopropyl)Ether	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Butylbenzylphthalate	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Chrysene	ND (0.181)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Dibenzo(a,h)Anthracene	ND (0.181)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Dibenzofuran	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Diethylphthalate	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Dimethylphthalate	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Di-n-butylphthalate	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Di-n-octylphthalate	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Fluoranthene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Fluorene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Hexachlorobenzene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Hexachlorobutadiene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Hexachloroethane	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Isophorone	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Naphthalene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Nitrobenzene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
N-Nitrosodimethylamine	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Pentachlorophenol	ND (1.81)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Phenanthrene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Phenol	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909
Pyrene	ND (0.362)		8270D		1	11/29/17 22:01	C7K0432	CK72909

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*68 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*78 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*82 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*73 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*72 %*		*30-130*				
Surrogate: Phenol-d6		*78 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*77 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (179)		9060		1	DEL	12/07/17 3:47	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.59)		6020A		20	NAR	11/29/17 17:25	2.03	100	CK72844
Arsenic	**19.6** (2.93)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844
Barium	**14.8** (2.93)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844
Beryllium	**0.39** (0.13)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844
Cadmium	ND (0.59)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844
Chromium	**43.5** (1.17)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844
Lead	**36.3** (5.87)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844
Mercury	ND (0.030)		7471B		1	MJV	11/29/17 14:28	0.78	40	CK72845
Nickel	**16.0** (2.93)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844
Selenium	ND (0.59)		6020A		20	NAR	11/29/17 17:25	2.03	100	CK72844
Silver	ND (0.59)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844
Thallium	ND (0.59)		6020A		20	NAR	11/29/17 17:25	2.03	100	CK72844
Vanadium	**11.4** (1.17)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844
Zinc	**23.8** (2.93)		6010C		1	KJK	11/29/17 13:43	2.03	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,1,1-Trichloroethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,1,2-Trichloroethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,1-Dichloroethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,1-Dichloroethene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,1-Dichloropropene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,2,3-Trichlorobenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,2,3-Trichloropropane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,2,4-Trichlorobenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,2,4-Trimethylbenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,2-Dibromo-3-Chloropropane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,2-Dibromoethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,2-Dichlorobenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,2-Dichloroethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,2-Dichloropropane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,3,5-Trimethylbenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,3-Dichlorobenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,3-Dichloropropane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,4-Dichlorobenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
1,4-Dioxane	ND (0.0916)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
2,2-Dichloropropane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
2-Butanone	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
2-Chlorotoluene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
2-Hexanone	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
4-Chlorotoluene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
4-Isopropyltoluene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
4-Methyl-2-Pentanone	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Acetone	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Benzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Bromobenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Bromochloromethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Bromoform	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Bromomethane	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Carbon Disulfide	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Carbon Tetrachloride	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Chlorobenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Chloroethane	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Chloroform	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Chloromethane	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
cis-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
cis-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Dibromochloromethane	ND (0.0018)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Dibromomethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Dichlorodifluoromethane	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Diethyl Ether	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Di-isopropyl ether	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Ethyl tertiary-butyl ether	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Ethylbenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Hexachlorobutadiene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Isopropylbenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Methyl tert-Butyl Ether	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Methylene Chloride	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Naphthalene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
n-Butylbenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
n-Propylbenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
sec-Butylbenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Styrene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
tert-Butylbenzene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Tertiary-amyl methyl ether	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Tetrachloroethene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Tetrahydrofuran	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Toluene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
trans-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Trichloroethene	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Trichlorofluoromethane	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Vinyl Chloride	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Xylene O	ND (0.0046)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Xylene P,M	ND (0.0092)		8260B Low		1	11/30/17 18:59	C7K0460	CK73025
Xylenes (Total)	ND (0.0092)		8260B Low		1	11/30/17 18:59		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*92 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*94 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/1/17 11:55

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
4,4´-DDE	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
4,4´-DDT	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Aldrin	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
alpha-BHC	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
alpha-Chlordane	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
beta-BHC	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Chlordane (Total)	ND (0.0249)		8081B		1	12/01/17 18:17	C7L0010	CK73013
delta-BHC	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Dieldrin	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Endosulfan I	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Endosulfan II	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Endosulfan Sulfate	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Endrin	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Endrin Ketone	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
gamma-BHC (Lindane)	ND (0.0019)		8081B		1	12/01/17 18:17	C7L0010	CK73013
gamma-Chlordane	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Heptachlor	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Heptachlor Epoxide	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Hexachlorobenzene	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013
Methoxychlor	ND (0.0031)		8081B		1	12/01/17 18:17	C7L0010	CK73013

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*91 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*91 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/30/17 13:50		CK72911
Aroclor 1221	ND (0.06)		8082A		1	11/30/17 13:50		CK72911
Aroclor 1232	ND (0.06)		8082A		1	11/30/17 13:50		CK72911
Aroclor 1242	ND (0.06)		8082A		1	11/30/17 13:50		CK72911
Aroclor 1248	ND (0.06)		8082A		1	11/30/17 13:50		CK72911
Aroclor 1254	ND (0.06)		8082A		1	11/30/17 13:50		CK72911
Aroclor 1260	ND (0.06)		8082A		1	11/30/17 13:50		CK72911
Aroclor 1262	ND (0.06)		8082A		1	11/30/17 13:50		CK72911
Aroclor 1268	ND (0.06)		8082A		1	11/30/17 13:50		CK72911

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*107 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*106 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*85 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 10
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.011)		8151A		1	12/01/17 20:57	C7L0001	CK72927
2,4,5-TP (Silvex)	ND (0.011)		8151A		1	12/01/17 20:57	C7L0001	CK72927
2,4-D	ND (0.056)		8151A		1	12/01/17 20:57	C7L0001	CK72927
2,4-DB	ND (0.057)		8151A		1	12/01/17 20:57	C7L0001	CK72927
Dalapon	ND (0.054)		8151A		1	12/01/17 20:57	C7L0001	CK72927
Dicamba	ND (0.011)		8151A		1	12/01/17 20:57	C7L0001	CK72927
Dichlorprop	ND (0.056)		8151A		1	12/01/17 20:57	C7L0001	CK72927
Dinoseb	ND (0.057)		8151A		1	12/01/17 20:57	C7L0001	CK72927
MCPA	ND (2.77)		8151A		1	12/01/17 20:57	C7L0001	CK72927
MCPP	# ND (2.80)		8151A		1	12/01/17 20:57	C7L0001	CK72927

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*108 %*		*30-150*
Surrogate: DCAA [2C]	*110 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
1,2-Dichlorobenzene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
1,3-Dichlorobenzene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
1,4-Dichlorobenzene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2,4,5-Trichlorophenol	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2,4,6-Trichlorophenol	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2,4-Dichlorophenol	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2,4-Dimethylphenol	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2,4-Dinitrophenol	ND (2.06)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2,4-Dinitrotoluene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2,6-Dinitrotoluene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2-Chloronaphthalene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2-Chlorophenol	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2-Methylnaphthalene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2-Methylphenol	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
2-Nitrophenol	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
3,3′-Dichlorobenzidine	ND (0.822)		8270D		1	11/29/17 22:35	C7K0432	CK72909
3+4-Methylphenol	ND (0.822)		8270D		1	11/29/17 22:35	C7K0432	CK72909
4-Bromophenyl-phenylether	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
4-Chloroaniline	ND (0.822)		8270D		1	11/29/17 22:35	C7K0432	CK72909
4-Nitrophenol	ND (2.06)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Acenaphthene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Acenaphthylene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Acetophenone	ND (0.822)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Aniline	ND (2.06)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Anthracene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Azobenzene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Benzo(a)anthracene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Benzo(a)pyrene	ND (0.206)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Benzo(b)fluoranthene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Benzo(g,h,i)perylene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Benzo(k)fluoranthene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
bis(2-Chloroethyl)ether	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
bis(2-chloroisopropyl)Ether	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Butylbenzylphthalate	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Chrysene	ND (0.206)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Dibenzo(a,h)Anthracene	ND (0.206)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Dibenzofuran	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Diethylphthalate	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Dimethylphthalate	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Di-n-butylphthalate	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Di-n-octylphthalate	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Fluoranthene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Fluorene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Hexachlorobenzene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Hexachlorobutadiene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Hexachloroethane	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Isophorone	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Naphthalene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Nitrobenzene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
N-Nitrosodimethylamine	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Pentachlorophenol	ND (2.06)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Phenanthrene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Phenol	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909
Pyrene	ND (0.410)		8270D		1	11/29/17 22:35	C7K0432	CK72909

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*75 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*83 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*86 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*78 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*76 %*		*30-130*				
Surrogate: Phenol-d6		*84 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*91 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**1450** (162)		9060		1	DEL	12/02/17 0:46	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.53)		6020A		20	NAR	11/29/17 17:31	2.26	100	CK72844
Arsenic	**21.5** (2.67)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844
Barium	**13.4** (2.67)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844
Beryllium	**0.38** (0.12)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844
Cadmium	ND (0.53)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844
Chromium	**35.2** (1.07)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844
Lead	**36.0** (5.34)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844
Mercury	ND (0.031)		7471B		1	MJV	11/29/17 14:30	0.76	40	CK72845
Nickel	**14.4** (2.67)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844
Selenium	ND (0.53)		6020A		20	NAR	11/29/17 17:31	2.26	100	CK72844
Silver	ND (0.53)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844
Thallium	ND (0.53)		6020A		20	NAR	11/29/17 17:31	2.26	100	CK72844
Vanadium	**10.7** (1.07)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844
Zinc	**24.2** (2.67)		6010C		1	KJK	11/29/17 13:47	2.26	100	CK72844

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
1,4-Dioxane	ND (0.0838)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
2-Butanone	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
2-Chlorotoluene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
2-Hexanone	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
4-Chlorotoluene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
4-Methyl-2-Pentanone	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Acetone	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Benzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Bromobenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Bromochloromethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Bromoform	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Bromomethane	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Carbon Disulfide	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Chlorobenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Chloroethane	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Chloroform	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Chloromethane	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Dibromochloromethane	ND (0.0017)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Dibromomethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Dichlorodifluoromethane	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Diethyl Ether	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Di-isopropyl ether	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Ethylbenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Isopropylbenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Methylene Chloride	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Naphthalene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
n-Butylbenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
n-Propylbenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
sec-Butylbenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Styrene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
tert-Butylbenzene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Tetrachloroethene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Tetrahydrofuran	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Toluene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Trichloroethene	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Vinyl Chloride	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Xylene O	ND (0.0042)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Xylene P,M	ND (0.0084)		8260B Low		1	11/30/17 19:24	C7K0460	CK73025
Xylenes (Total)	ND (0.0084)		8260B Low		1	11/30/17 19:24		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*96 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 20.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 11/30/17 15:05

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
4,4´-DDE	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
4,4´-DDT	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Aldrin	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
alpha-BHC	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
alpha-Chlordane	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
beta-BHC	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Chlordane (Total)	ND (0.0236)		8081B		1	12/01/17 18:45	C7L0010	CK73013
delta-BHC	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Dieldrin	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Endosulfan I	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Endosulfan II	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Endrin	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Endrin Ketone	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	12/01/17 18:45	C7L0010	CK73013
gamma-Chlordane	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Heptachlor	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Hexachlorobenzene	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013
Methoxychlor	ND (0.0029)		8081B		1	12/01/17 18:45	C7L0010	CK73013

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*63 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*51 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*56 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/30/17 14:09		CK72911
Aroclor 1221	ND (0.06)		8082A		1	11/30/17 14:09		CK72911
Aroclor 1232	ND (0.06)		8082A		1	11/30/17 14:09		CK72911
Aroclor 1242	ND (0.06)		8082A		1	11/30/17 14:09		CK72911
Aroclor 1248	ND (0.06)		8082A		1	11/30/17 14:09		CK72911
Aroclor 1254	ND (0.06)		8082A		1	11/30/17 14:09		CK72911
Aroclor 1260	ND (0.06)		8082A		1	11/30/17 14:09		CK72911
Aroclor 1262	ND (0.06)		8082A		1	11/30/17 14:09		CK72911
Aroclor 1268	ND (0.06)		8082A		1	11/30/17 14:09		CK72911

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*101 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*101 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*85 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.011)		8151A		1	12/05/17 4:50	C7L0036	CK72927
2,4,5-TP (Silvex)	ND (0.011)		8151A		1	12/05/17 4:50	C7L0036	CK72927
2,4-D	ND (0.056)		8151A		1	12/05/17 4:50	C7L0036	CK72927
2,4-DB	ND (0.056)		8151A		1	12/05/17 4:50	C7L0036	CK72927
Dalapon	ND (0.054)		8151A		1	12/05/17 4:50	C7L0036	CK72927
Dicamba	ND (0.011)		8151A		1	12/05/17 4:50	C7L0036	CK72927
Dichlorprop	ND (0.056)		8151A		1	12/05/17 4:50	C7L0036	CK72927
Dinoseb	ND (0.056)		8151A		1	12/05/17 4:50	C7L0036	CK72927
MCPA	ND (2.75)		8151A		1	12/05/17 4:50	C7L0036	CK72927
MCPP	# ND (2.78)		8151A		1	12/05/17 4:50	C7L0036	CK72927

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*105 %*		*30-150*
Surrogate: DCAA [2C]	*120 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
1,2-Dichlorobenzene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
1,3-Dichlorobenzene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
1,4-Dichlorobenzene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2,4,5-Trichlorophenol	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2,4,6-Trichlorophenol	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2,4-Dichlorophenol	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2,4-Dimethylphenol	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2,4-Dinitrophenol	ND (2.02)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2,4-Dinitrotoluene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2,6-Dinitrotoluene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2-Chloronaphthalene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2-Chlorophenol	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2-Methylnaphthalene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2-Methylphenol	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
2-Nitrophenol	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
3,3′-Dichlorobenzidine	ND (0.805)		8270D		1	11/29/17 23:09	C7K0432	CK72909
3+4-Methylphenol	ND (0.805)		8270D		1	11/29/17 23:09	C7K0432	CK72909
4-Bromophenyl-phenylether	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
4-Chloroaniline	ND (0.805)		8270D		1	11/29/17 23:09	C7K0432	CK72909
4-Nitrophenol	ND (2.02)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Acenaphthene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Acenaphthylene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Acetophenone	ND (0.805)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Aniline	ND (2.02)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Anthracene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Azobenzene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Benzo(a)anthracene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Benzo(a)pyrene	ND (0.202)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Benzo(b)fluoranthene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Benzo(g,h,i)perylene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Benzo(k)fluoranthene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
bis(2-Chloroethyl)ether	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
bis(2-chloroisopropyl)Ether	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
bis(2-Ethylhexyl)phthalate	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Butylbenzylphthalate	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Chrysene	ND (0.202)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Dibenzo(a,h)Anthracene	ND (0.202)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Dibenzofuran	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Diethylphthalate	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Dimethylphthalate	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Di-n-butylphthalate	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Di-n-octylphthalate	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Fluoranthene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Fluorene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Hexachlorobenzene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Hexachlorobutadiene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Hexachloroethane	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Indeno(1,2,3-cd)Pyrene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Isophorone	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Naphthalene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Nitrobenzene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
N-Nitrosodimethylamine	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Pentachlorophenol	ND (2.02)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Phenanthrene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Phenol	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909
Pyrene	ND (0.402)		8270D		1	11/29/17 23:09	C7K0432	CK72909

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*75 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*76 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*81 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*76 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*74 %*		*30-130*				
Surrogate: Phenol-d6		*82 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*94 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**1170** (133)		9060		1	DEL	12/02/17 1:03	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/28/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
1,4-Dioxane	ND (0.100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
2-Butanone	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
2-Chlorotoluene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
2-Hexanone	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
4-Chlorotoluene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
4-Methyl-2-Pentanone	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Acetone	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Benzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Bromobenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Bromochloromethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/28/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Bromoform	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Bromomethane	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Carbon Disulfide	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Chlorobenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Chloroethane	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Chloroform	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Chloromethane	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Dibromochloromethane	ND (0.0020)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Dibromomethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Dichlorodifluoromethane	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Diethyl Ether	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Di-isopropyl ether	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Ethylbenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Isopropylbenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Methylene Chloride	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Naphthalene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
n-Butylbenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
n-Propylbenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
sec-Butylbenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Styrene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
tert-Butylbenzene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Tetrachloroethene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Tetrahydrofuran	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Toluene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/28/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Trichloroethene	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Vinyl Chloride	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Xylene O	ND (0.0050)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Xylene P,M	ND (0.0100)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939
Xylenes (Total)	ND (0.0075)		8260B Low		1	11/29/17 16:12	C7K0446	CK72939

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*100 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*94 %*		*70-130*
Surrogate: Dibromofluoromethane	*100 %*		*70-130*
Surrogate: Toluene-d8	*106 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
				Total Metals						
Batch CK72844 - 3050B										
Blank										
Antimony	ND	0.50	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	0.50	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	0.50	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	47.4	4.24	mg/kg wet	48.00		99	80-120			
Arsenic	120	8.47	mg/kg wet	123.0		98	80-120			
Barium	237	8.47	mg/kg wet	253.0		94	80-120			
Beryllium	177	0.37	mg/kg wet	192.0		92	80-120			
Cadmium	193	1.69	mg/kg wet	224.0		86	80-120			
Chromium	171	3.39	mg/kg wet	179.0		95	80-120			
Lead	141	16.9	mg/kg wet	145.0		97	80-120			
Nickel	129	8.47	mg/kg wet	143.0		90	80-120			
Selenium	43.0	4.24	mg/kg wet	42.40		101	80-120			
Silver	81.0	1.69	mg/kg wet	81.60		99	80-120			
Thallium	47.8	4.24	mg/kg wet	52.00		92	80-120			
Vanadium	65.8	3.39	mg/kg wet	72.30		91	80-120			
Zinc	708	8.47	mg/kg wet	770.0		92	80-120			
LCS Dup										
Antimony	46.1	4.03	mg/kg wet	48.00		96	80-120	3	30	
Arsenic	121	8.06	mg/kg wet	123.0		98	80-120	0.5	20	
Barium	236	8.06	mg/kg wet	253.0		93	80-120	0.6	20	
Beryllium	179	0.35	mg/kg wet	192.0		93	80-120	1	20	
Cadmium	196	1.61	mg/kg wet	224.0		87	80-120	2	20	
Chromium	173	3.23	mg/kg wet	179.0		97	80-120	1	20	
Lead	140	16.1	mg/kg wet	145.0		97	80-120	0.7	20	
Nickel	132	8.06	mg/kg wet	143.0		92	80-120	2	20	
Selenium	42.4	4.03	mg/kg wet	42.40		100	80-120	1	30	
Silver	82.2	1.61	mg/kg wet	81.60		101	80-120	2	20	
Thallium	48.6	4.03	mg/kg wet	52.00		93	80-120	2	30	
Vanadium	66.5	3.23	mg/kg wet	72.30		92	80-120	1	20	
Zinc	721	8.06	mg/kg wet	770.0		94	80-120	2	20	
Reference										
Barium	430	9.62	mg/kg wet	500.0		86	70-130			
Cadmium	390	1.92	mg/kg wet	500.0		78	70-130			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CK72844 - 3050B										
Chromium	456	3.85	mg/kg wet	500.0		91	70-130			
Lead	436	19.2	mg/kg wet	500.0		87	70-130			
Silver	256	1.92	mg/kg wet	500.0		51	70-130			
Batch CK72845 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	20.7	1.87	mg/kg wet	17.80		116	80-120			
LCS Dup										
Mercury	20.4	1.94	mg/kg wet	17.80		114	80-120	2	20	
Reference										
Mercury	1.06	0.187	mg/kg wet	1000		0.1	0-200			
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK72939 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK72939 - 5035										
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0490*		mg/kg wet	*0.05000*		*98*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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ESS Laboratory Work Order: 1711726

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK72939 - 5035										
Surrogate: 4-Bromofluorobenzene	*0.0472*		mg/kg wet	*0.05000*		*94*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0489*		mg/kg wet	*0.05000*		*98*	*70-130*			
Surrogate: Toluene-d8	*0.0518*		mg/kg wet	*0.05000*		*104*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,1-Trichloroethane	0.0588	0.0050	mg/kg wet	0.05000		118	70-130			
1,1,2,2-Tetrachloroethane	0.0532	0.0020	mg/kg wet	0.05000		106	70-130			
1,1,2-Trichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
1,1-Dichloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
1,1-Dichloroethene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloropropene	0.0569	0.0050	mg/kg wet	0.05000		114	70-130			
1,2,3-Trichlorobenzene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
1,2,3-Trichloropropane	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
1,2,4-Trichlorobenzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
1,2,4-Trimethylbenzene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
1,2-Dibromo-3-Chloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
1,2-Dibromoethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
1,2-Dichlorobenzene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
1,2-Dichloroethane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130			
1,2-Dichloropropane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
1,3,5-Trimethylbenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
1,3-Dichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
1,3-Dichloropropane	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
1,4-Dichlorobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,4-Dioxane	1.07	0.100	mg/kg wet	1.000		107	70-130			
2,2-Dichloropropane	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
2-Butanone	0.281	0.0100	mg/kg wet	0.2500		112	70-130			
2-Chlorotoluene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
2-Hexanone	0.240	0.0100	mg/kg wet	0.2500		96	70-130			
4-Chlorotoluene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
4-Isopropyltoluene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
4-Methyl-2-Pentanone	0.256	0.0100	mg/kg wet	0.2500		103	70-130			
Acetone	0.288	0.0100	mg/kg wet	0.2500		115	70-130			
Benzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Bromobenzene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
Bromochloromethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Bromodichloromethane	0.0604	0.0050	mg/kg wet	0.05000		121	70-130			
Bromoform	0.0575	0.0050	mg/kg wet	0.05000		115	70-130			
Bromomethane	0.0483	0.0100	mg/kg wet	0.05000		97	70-130			
Carbon Disulfide	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
Chlorobenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Chloroethane	0.0517	0.0100	mg/kg wet	0.05000		103	70-130			
Chloroform	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK72939 - 5035										
Chloromethane	0.0474	0.0100	mg/kg wet	0.05000		95	70-130			
cis-1,2-Dichloroethene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
cis-1,3-Dichloropropene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
Dibromochloromethane	0.0499	0.0020	mg/kg wet	0.05000		100	70-130			
Dibromomethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Dichlorodifluoromethane	0.0441	0.0100	mg/kg wet	0.05000		88	70-130			
Diethyl Ether	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
Di-isopropyl ether	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Ethyl tertiary-butyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Ethylbenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
Isopropylbenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
Methyl tert-Butyl Ether	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
Methylene Chloride	0.0543	0.0100	mg/kg wet	0.05000		109	70-130			
Naphthalene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
n-Butylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
n-Propylbenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
sec-Butylbenzene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Styrene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
tert-Butylbenzene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
Tertiary-amyl methyl ether	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
Tetrachloroethene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrahydrofuran	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Toluene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
trans-1,2-Dichloroethene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
trans-1,3-Dichloropropene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Trichloroethene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Trichlorofluoromethane	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
Vinyl Chloride	0.0485	0.0100	mg/kg wet	0.05000		97	70-130			
Xylene O	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Xylene P,M	0.103	0.0100	mg/kg wet	0.1000		103	70-130			
Xylenes (Total)	0.156	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0532*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0482*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0516*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0477*		mg/kg wet	*0.05000*		*95*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	15	20	
1,1,1-Trichloroethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	15	20	
1,1,2,2-Tetrachloroethane	0.0437	0.0020	mg/kg wet	0.05000		87	70-130	20	20	
1,1,2-Trichloroethane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	20	20	
1,1-Dichloroethane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	15	20	
1,1-Dichloroethene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	14	20	
1,1-Dichloropropene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	16	20	
1,2,3-Trichlorobenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	14	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK72939 - 5035										
1,2,3-Trichloropropane	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	22	20	D+
1,2,4-Trichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	15	20	
1,2,4-Trimethylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	14	20	
1,2-Dibromo-3-Chloropropane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	12	20	
1,2-Dibromoethane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	18	20	
1,2-Dichlorobenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	16	20	
1,2-Dichloroethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	20	20	
1,2-Dichloropropane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	17	20	
1,3,5-Trimethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	13	20	
1,3-Dichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	12	20	
1,3-Dichloropropane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	16	20	
1,4-Dichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	16	20	
1,4-Dioxane	0.848	0.100	mg/kg wet	1.000		85	70-130	23	20	D+
2,2-Dichloropropane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	16	20	
2-Butanone	0.220	0.0100	mg/kg wet	0.2500		88	70-130	24	20	D+
2-Chlorotoluene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	14	20	
2-Hexanone	0.191	0.0100	mg/kg wet	0.2500		77	70-130	22	20	D+
4-Chlorotoluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	12	20	
4-Isopropyltoluene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	12	20	
4-Methyl-2-Pentanone	0.194	0.0100	mg/kg wet	0.2500		78	70-130	28	20	D+
Acetone	0.221	0.0100	mg/kg wet	0.2500		88	70-130	26	20	D+
Benzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	16	20	
Bromobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	14	20	
Bromochloromethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	18	20	
Bromodichloromethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	19	20	
Bromoform	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	20	20	
Bromomethane	0.0420	0.0100	mg/kg wet	0.05000		84	70-130	14	20	
Carbon Disulfide	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	15	20	
Carbon Tetrachloride	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	15	20	
Chlorobenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	15	20	
Chloroethane	0.0442	0.0100	mg/kg wet	0.05000		88	70-130	15	20	
Chloroform	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	16	20	
Chloromethane	0.0411	0.0100	mg/kg wet	0.05000		82	70-130	14	20	
cis-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	16	20	
cis-1,3-Dichloropropene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	18	20	
Dibromochloromethane	0.0429	0.0020	mg/kg wet	0.05000		86	70-130	15	20	
Dibromomethane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	20	20	
Dichlorodifluoromethane	0.0376	0.0100	mg/kg wet	0.05000		75	70-130	16	20	
Diethyl Ether	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	19	20	
Di-isopropyl ether	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	18	20	
Ethyl tertiary-butyl ether	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	19	20	
Ethylbenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	13	20	
Hexachlorobutadiene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	12	20	
Isopropylbenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	12	20	
Methyl tert-Butyl Ether	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	21	20	D+

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK72939 - 5035										
Methylene Chloride	0.0455	0.0100	mg/kg wet	0.05000		91	70-130	18	20	
Naphthalene	0.0403	0.0050	mg/kg wet	0.05000		81	70-130	19	20	
n-Butylbenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	13	20	
n-Propylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	12	20	
sec-Butylbenzene	0.0371	0.0050	mg/kg wet	0.05000		74	70-130	13	20	
Styrene	0.0412	0.0050	mg/kg wet	0.05000		82	70-130	14	20	
tert-Butylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	13	20	
Tertiary-amyl methyl ether	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	20	20	
Tetrachloroethene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	11	20	
Tetrahydrofuran	0.0387	0.0050	mg/kg wet	0.05000		77	70-130	25	20	D+
Toluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	17	20	
trans-1,2-Dichloroethene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	14	20	
trans-1,3-Dichloropropene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	19	20	
Trichloroethene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	14	20	
Trichlorofluoromethane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	15	20	
Vinyl Chloride	0.0423	0.0100	mg/kg wet	0.05000		85	70-130	14	20	
Xylene O	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	14	20	
Xylene P,M	0.0907	0.0100	mg/kg wet	0.1000		91	70-130	13	20	
Xylenes (Total)	0.137	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0505*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0485*		mg/kg wet	*0.05000*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0506*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: Toluene-d8	*0.0486*		mg/kg wet	*0.05000*		*97*	*70-130*			
Batch CK73025 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK73025 - 5035										
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK73025 - 5035										
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0515*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0467*		mg/kg wet	*0.05000*		*93*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0511*		mg/kg wet	*0.05000*		*102*	*70-130*			
Surrogate: Toluene-d8	*0.0513*		mg/kg wet	*0.05000*		*103*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,1,2,2-Tetrachloroethane	0.0451	0.0020	mg/kg wet	0.05000		90	70-130			
1,1,2-Trichloroethane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,1-Dichloroethane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
1,1-Dichloroethene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,1-Dichloropropene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,3-Trichloropropane	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,4-Trichlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,4-Trimethylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
1,2-Dibromoethane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dichloroethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,2-Dichloropropane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,3,5-Trimethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,3-Dichlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
1,3-Dichloropropane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,4-Dichlorobenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,4-Dioxane	0.825	0.100	mg/kg wet	1.000		82	70-130			
2,2-Dichloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
2-Butanone	0.233	0.0100	mg/kg wet	0.2500		93	70-130			
2-Chlorotoluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
2-Hexanone	0.191	0.0100	mg/kg wet	0.2500		76	70-130			
4-Chlorotoluene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
4-Isopropyltoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
4-Methyl-2-Pentanone	0.201	0.0100	mg/kg wet	0.2500		81	70-130			
Acetone	0.229	0.0100	mg/kg wet	0.2500		92	70-130			
Benzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Bromobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Bromochloromethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Bromodichloromethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK73025 - 5035										
Bromoform	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromomethane	0.0441	0.0100	mg/kg wet	0.05000		88	70-130			
Carbon Disulfide	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Carbon Tetrachloride	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Chlorobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Chloroethane	0.0454	0.0100	mg/kg wet	0.05000		91	70-130			
Chloroform	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Chloromethane	0.0432	0.0100	mg/kg wet	0.05000		86	70-130			
cis-1,2-Dichloroethene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
cis-1,3-Dichloropropene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Dibromochloromethane	0.0445	0.0020	mg/kg wet	0.05000		89	70-130			
Dibromomethane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Dichlorodifluoromethane	0.0395	0.0100	mg/kg wet	0.05000		79	70-130			
Diethyl Ether	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Di-isopropyl ether	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Ethyl tertiary-butyl ether	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Ethylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
Hexachlorobutadiene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Isopropylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
Methyl tert-Butyl Ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Methylene Chloride	0.0487	0.0100	mg/kg wet	0.05000		97	70-130			
Naphthalene	0.0401	0.0050	mg/kg wet	0.05000		80	70-130			
n-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
n-Propylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
sec-Butylbenzene	0.0373	0.0050	mg/kg wet	0.05000		75	70-130			
Styrene	0.0412	0.0050	mg/kg wet	0.05000		82	70-130			
tert-Butylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Tertiary-amyl methyl ether	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Tetrachloroethene	0.0436	0.0050	mg/kg wet	0.05000		87	70-130			
Tetrahydrofuran	0.0380	0.0050	mg/kg wet	0.05000		76	70-130			
Toluene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
trans-1,2-Dichloroethene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
trans-1,3-Dichloropropene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
Trichloroethene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Trichlorofluoromethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Vinyl Chloride	0.0439	0.0100	mg/kg wet	0.05000		88	70-130			
Xylene O	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Xylene P,M	0.0902	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.137	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0519*		mg/kg wet	*0.05000*		*104*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0482*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0518*		mg/kg wet	*0.05000*		*104*	*70-130*			
Surrogate: Toluene-d8	*0.0474*		mg/kg wet	*0.05000*		*95*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	2	20	

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK73025 - 5035										
1,1,1-Trichloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	5	20	
1,1,2,2-Tetrachloroethane	0.0447	0.0020	mg/kg wet	0.05000		89	70-130	1	20	
1,1,2-Trichloroethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	2	20	
1,1-Dichloroethane	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	3	20	
1,1-Dichloroethene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	3	20	
1,1-Dichloropropene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	4	20	
1,2,3-Trichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.8	20	
1,2,3-Trichloropropane	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.1	20	
1,2,4-Trichlorobenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	0.3	20	
1,2,4-Trimethylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	1	20	
1,2-Dibromo-3-Chloropropane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	4	20	
1,2-Dibromoethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	1	20	
1,2-Dichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	0.9	20	
1,2-Dichloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	3	20	
1,2-Dichloropropane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	2	20	
1,3,5-Trimethylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	2	20	
1,3-Dichlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	2	20	
1,3-Dichloropropane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	0.04	20	
1,4-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	2	20	
1,4-Dioxane	0.853	0.100	mg/kg wet	1.000		85	70-130	3	20	
2,2-Dichloropropane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
2-Butanone	0.231	0.0100	mg/kg wet	0.2500		92	70-130	1	20	
2-Chlorotoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	1	20	
2-Hexanone	0.195	0.0100	mg/kg wet	0.2500		78	70-130	2	20	
4-Chlorotoluene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	2	20	
4-Isopropyltoluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	2	20	
4-Methyl-2-Pentanone	0.204	0.0100	mg/kg wet	0.2500		81	70-130	1	20	
Acetone	0.231	0.0100	mg/kg wet	0.2500		93	70-130	1	20	
Benzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	3	20	
Bromobenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	0.9	20	
Bromochloromethane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	3	20	
Bromodichloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	3	20	
Bromoform	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	0.2	20	
Bromomethane	0.0412	0.0100	mg/kg wet	0.05000		82	70-130	7	20	
Carbon Disulfide	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	5	20	
Carbon Tetrachloride	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	5	20	
Chlorobenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	3	20	
Chloroethane	0.0435	0.0100	mg/kg wet	0.05000		87	70-130	4	20	
Chloroform	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	3	20	
Chloromethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130	4	20	
cis-1,2-Dichloroethene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	2	20	
cis-1,3-Dichloropropene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	0.4	20	
Dibromochloromethane	0.0442	0.0020	mg/kg wet	0.05000		88	70-130	0.9	20	
Dibromomethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	1	20	
Dichlorodifluoromethane	0.0367	0.0100	mg/kg wet	0.05000		73	70-130	7	20	

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK73025 - 5035										
Diethyl Ether	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	0.3	20	
Di-isopropyl ether	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.5	20	
Ethyl tertiary-butyl ether	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	0.3	20	
Ethylbenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	3	20	
Hexachlorobutadiene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	2	20	
Isopropylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	2	20	
Methyl tert-Butyl Ether	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	0.7	20	
Methylene Chloride	0.0474	0.0100	mg/kg wet	0.05000		95	70-130	3	20	
Naphthalene	0.0412	0.0050	mg/kg wet	0.05000		82	70-130	3	20	
n-Butylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	3	20	
n-Propylbenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	2	20	
sec-Butylbenzene	0.0368	0.0050	mg/kg wet	0.05000		74	70-130	1	20	
Styrene	0.0409	0.0050	mg/kg wet	0.05000		82	70-130	0.9	20	
tert-Butylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	2	20	
Tertiary-amyl methyl ether	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	0.3	20	
Tetrachloroethene	0.0423	0.0050	mg/kg wet	0.05000		85	70-130	3	20	
Tetrahydrofuran	0.0391	0.0050	mg/kg wet	0.05000		78	70-130	3	20	
Toluene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	4	20	
trans-1,2-Dichloroethene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	3	20	
trans-1,3-Dichloropropene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	0.5	20	
Trichloroethene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	3	20	
Trichlorofluoromethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	5	20	
Vinyl Chloride	0.0416	0.0100	mg/kg wet	0.05000		83	70-130	5	20	
Xylene O	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	3	20	
Xylene P,M	0.0881	0.0100	mg/kg wet	0.1000		88	70-130	2	20	
Xylenes (Total)	0.133	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0520*		mg/kg wet	*0.05000*		*104*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0481*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0519*		mg/kg wet	*0.05000*		*104*	*70-130*			
Surrogate: Toluene-d8	*0.0478*		mg/kg wet	*0.05000*		*96*	*70-130*			
8081B Organochlorine Pesticides										
Batch CK72816 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CK72816 - 3546										
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0114*		mg/kg wet	*0.01250*		*91*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0106*		mg/kg wet	*0.01250*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00899*		mg/kg wet	*0.01250*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.00923*		mg/kg wet	*0.01250*		*74*	*30-150*			
LCS										
4,4´-DDD	0.0092	0.0025	mg/kg wet	0.01250		74	40-140			
4,4´-DDD [2C]	0.0089	0.0025	mg/kg wet	0.01250		71	40-140			
4,4´-DDE	0.0089	0.0025	mg/kg wet	0.01250		71	40-140			
4,4´-DDE [2C]	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
4,4´-DDT	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
4,4´-DDT [2C]	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
Aldrin	0.0098	0.0025	mg/kg wet	0.01250		78	40-140			
Aldrin [2C]	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
alpha-BHC	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
alpha-BHC [2C]	0.0092	0.0025	mg/kg wet	0.01250		74	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CK72816 - 3546										
alpha-Chlordane	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
alpha-Chlordane [2C]	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
beta-BHC	0.0089	0.0025	mg/kg wet	0.01250		72	40-140			
beta-BHC [2C]	0.0088	0.0025	mg/kg wet	0.01250		71	40-140			
delta-BHC	0.0089	0.0025	mg/kg wet	0.01250		72	40-140			
delta-BHC [2C]	0.0088	0.0025	mg/kg wet	0.01250		70	40-140			
Dieldrin	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Dieldrin [2C]	0.0101	0.0025	mg/kg wet	0.01250		81	40-140			
Endosulfan I	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Endosulfan I [2C]	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
Endosulfan II	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
Endosulfan II [2C]	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
Endosulfan Sulfate	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
Endosulfan Sulfate [2C]	0.0094	0.0025	mg/kg wet	0.01250		75	40-140			
Endrin	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
Endrin [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
Endrin Ketone	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
Endrin Ketone [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
gamma-BHC (Lindane)	0.0093	0.0015	mg/kg wet	0.01250		74	40-140			
gamma-BHC (Lindane) [2C]	0.0093	0.0015	mg/kg wet	0.01250		75	40-140			
gamma-Chlordane	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
gamma-Chlordane [2C]	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
Heptachlor	0.0094	0.0025	mg/kg wet	0.01250		75	40-140			
Heptachlor [2C]	0.0091	0.0025	mg/kg wet	0.01250		73	40-140			
Heptachlor Epoxide	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Heptachlor Epoxide [2C]	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Hexachlorobenzene	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
Hexachlorobenzene [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Methoxychlor	0.0094	0.0025	mg/kg wet	0.01250		75	40-140			
Methoxychlor [2C]	0.0087	0.0025	mg/kg wet	0.01250		69	40-140			
Surrogate: Decachlorobiphenyl	*0.0122*		mg/kg wet	*0.01250*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0113*		mg/kg wet	*0.01250*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00983*		mg/kg wet	*0.01250*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.00956*		mg/kg wet	*0.01250*		*76*	*30-150*			
LCS Dup										
4,4´-DDD	0.0099	0.0025	mg/kg wet	0.01250		79	40-140	7	30	
4,4´-DDD [2C]	0.0095	0.0025	mg/kg wet	0.01250		76	40-140	7	30	
4,4´-DDE	0.0096	0.0025	mg/kg wet	0.01250		77	40-140	8	30	
4,4´-DDE [2C]	0.0102	0.0025	mg/kg wet	0.01250		82	40-140	6	30	
4,4´-DDT	0.0102	0.0025	mg/kg wet	0.01250		82	40-140	7	30	
4,4´-DDT [2C]	0.0097	0.0025	mg/kg wet	0.01250		78	40-140	7	30	
Aldrin	0.0103	0.0025	mg/kg wet	0.01250		82	40-140	5	30	
Aldrin [2C]	0.0102	0.0025	mg/kg wet	0.01250		81	40-140	5	30	
alpha-BHC	0.0097	0.0025	mg/kg wet	0.01250		78	40-140	4	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CK72816 - 3546										
alpha-BHC [2C]	0.0097	0.0025	mg/kg wet	0.01250		77	40-140	5	30	
alpha-Chlordane	0.0099	0.0025	mg/kg wet	0.01250		79	40-140	6	30	
alpha-Chlordane [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140	6	30	
beta-BHC	0.0094	0.0025	mg/kg wet	0.01250		75	40-140	5	30	
beta-BHC [2C]	0.0094	0.0025	mg/kg wet	0.01250		75	40-140	6	30	
delta-BHC	0.0094	0.0025	mg/kg wet	0.01250		75	40-140	5	30	
delta-BHC [2C]	0.0094	0.0025	mg/kg wet	0.01250		75	40-140	6	30	
Dieldrin	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	6	30	
Dieldrin [2C]	0.0107	0.0025	mg/kg wet	0.01250		85	40-140	5	30	
Endosulfan I	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	5	30	
Endosulfan I [2C]	0.0103	0.0025	mg/kg wet	0.01250		82	40-140	5	30	
Endosulfan II	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	7	30	
Endosulfan II [2C]	0.0101	0.0025	mg/kg wet	0.01250		81	40-140	6	30	
Endosulfan Sulfate	0.0104	0.0025	mg/kg wet	0.01250		84	40-140	7	30	
Endosulfan Sulfate [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140	7	30	
Endrin	0.0102	0.0025	mg/kg wet	0.01250		82	40-140	6	30	
Endrin [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	6	30	
Endrin Ketone	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	7	30	
Endrin Ketone [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	7	30	
gamma-BHC (Lindane)	0.0098	0.0015	mg/kg wet	0.01250		79	40-140	5	30	
gamma-BHC (Lindane) [2C]	0.0098	0.0015	mg/kg wet	0.01250		79	40-140	5	30	
gamma-Chlordane	0.0101	0.0025	mg/kg wet	0.01250		80	40-140	6	30	
gamma-Chlordane [2C]	0.0101	0.0025	mg/kg wet	0.01250		81	40-140	5	30	
Heptachlor	0.0098	0.0025	mg/kg wet	0.01250		78	40-140	4	30	
Heptachlor [2C]	0.0095	0.0025	mg/kg wet	0.01250		76	40-140	4	30	
Heptachlor Epoxide	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	6	30	
Heptachlor Epoxide [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	5	30	
Hexachlorobenzene	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	4	30	
Hexachlorobenzene [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140	3	30	
Methoxychlor	0.0099	0.0025	mg/kg wet	0.01250		79	40-140	6	30	
Methoxychlor [2C]	0.0094	0.0025	mg/kg wet	0.01250		75	40-140	8	30	
Surrogate: Decachlorobiphenyl	*0.0127*		mg/kg wet	*0.01250*		*102*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0118*		mg/kg wet	*0.01250*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00992*		mg/kg wet	*0.01250*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.00960*		mg/kg wet	*0.01250*		*77*	*30-150*			
Batch CK73013 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CK73013 - 3546										
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
Chlordane (Total)	ND	0.0200	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0200	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0118*		mg/kg wet	*0.01250*		*94*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0127*		mg/kg wet	*0.01250*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00990*		mg/kg wet	*0.01250*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0104*		mg/kg wet	*0.01250*		*83*	*30-150*			
LCS										
4,4´-DDD	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
4,4´-DDD [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
4,4´-DDE	0.0107	0.0025	mg/kg wet	0.01250		85	40-140			
4,4´-DDE [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CK73013 - 3546										
4,4´-DDT	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
4,4´-DDT [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
Aldrin	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
Aldrin [2C]	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
alpha-BHC	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
alpha-BHC [2C]	0.0106	0.0025	mg/kg wet	0.01250		84	40-140			
alpha-Chlordane	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
alpha-Chlordane [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
beta-BHC	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
beta-BHC [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
delta-BHC	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
delta-BHC [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Dieldrin	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
Dieldrin [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
Endosulfan I	0.0101	0.0025	mg/kg wet	0.01250		81	40-140			
Endosulfan I [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
Endosulfan II	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Endosulfan II [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Endosulfan Sulfate	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Endosulfan Sulfate [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Endrin	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Endrin [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
Endrin Ketone	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Endrin Ketone [2C]	0.0113	0.0025	mg/kg wet	0.01250		91	40-140			
gamma-BHC (Lindane)	0.0107	0.0015	mg/kg wet	0.01250		86	40-140			
gamma-BHC (Lindane) [2C]	0.0108	0.0015	mg/kg wet	0.01250		86	40-140			
gamma-Chlordane	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
gamma-Chlordane [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140			
Heptachlor	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Heptachlor [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Heptachlor Epoxide	0.0117	0.0025	mg/kg wet	0.01250		93	40-140			
Heptachlor Epoxide [2C]	0.0113	0.0025	mg/kg wet	0.01250		91	40-140			
Hexachlorobenzene	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
Hexachlorobenzene [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
Methoxychlor	0.0098	0.0025	mg/kg wet	0.01250		78	40-140			
Methoxychlor [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Surrogate: Decachlorobiphenyl	*0.0130*		mg/kg wet	*0.01250*		*104*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0130*		mg/kg wet	*0.01250*		*104*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0107*		mg/kg wet	*0.01250*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0105*		mg/kg wet	*0.01250*		*84*	*30-150*			
LCS Dup										
4,4´-DDD	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	9	30	
4,4´-DDD [2C]	0.0117	0.0025	mg/kg wet	0.01250		93	40-140	6	30	
4,4´-DDE	0.0113	0.0025	mg/kg wet	0.01250		91	40-140	6	30	

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CK73013 - 3546										
4,4´-DDE [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140	6	30	
4,4´-DDT	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	6	30	
4,4´-DDT [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140	5	30	
Aldrin	0.0094	0.0025	mg/kg wet	0.01250		76	40-140	1	30	
Aldrin [2C]	0.0093	0.0025	mg/kg wet	0.01250		75	40-140	2	30	
alpha-BHC	0.0112	0.0025	mg/kg wet	0.01250		89	40-140	6	30	
alpha-BHC [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	5	30	
alpha-Chlordane	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	6	30	
alpha-Chlordane [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	6	30	
beta-BHC	0.0109	0.0025	mg/kg wet	0.01250		88	40-140	9	30	
beta-BHC [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	5	30	
delta-BHC	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	8	30	
delta-BHC [2C]	0.0112	0.0025	mg/kg wet	0.01250		89	40-140	6	30	
Dieldrin	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	7	30	
Dieldrin [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	5	30	
Endosulfan I	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	17	30	
Endosulfan I [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	6	30	
Endosulfan II	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	8	30	
Endosulfan II [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	5	30	
Endosulfan Sulfate	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	6	30	
Endosulfan Sulfate [2C]	0.0114	0.0025	mg/kg wet	0.01250		92	40-140	5	30	
Endrin	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	5	30	
Endrin [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
Endrin Ketone	0.0121	0.0025	mg/kg wet	0.01250		97	40-140	6	30	
Endrin Ketone [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
gamma-BHC (Lindane)	0.0113	0.0015	mg/kg wet	0.01250		91	40-140	6	30	
gamma-BHC (Lindane) [2C]	0.0114	0.0015	mg/kg wet	0.01250		91	40-140	5	30	
gamma-Chlordane	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	5	30	
gamma-Chlordane [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	6	30	
Heptachlor	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	4	30	
Heptachlor [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	0.7	30	
Heptachlor Epoxide	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	5	30	
Heptachlor Epoxide [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
Hexachlorobenzene	0.0130	0.0025	mg/kg wet	0.01250		104	40-140	5	30	
Hexachlorobenzene [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140	4	30	
Methoxychlor	0.0102	0.0025	mg/kg wet	0.01250		81	40-140	4	30	
Methoxychlor [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0136*		mg/kg wet	*0.01250*		*109*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0133*		mg/kg wet	*0.01250*		*106*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0108*		mg/kg wet	*0.01250*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0105*		mg/kg wet	*0.01250*		*84*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CK72812 - 3540C										

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK72812 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0217*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0224*		mg/kg wet	*0.02500*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0229*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0236*		mg/kg wet	*0.02500*		*94*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		105	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		108	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		109	40-140			
Aroclor 1260 [2C]	0.6	0.05	mg/kg wet	0.5000		117	40-140			
Surrogate: Decachlorobiphenyl	*0.0265*		mg/kg wet	*0.02500*		*106*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0265*		mg/kg wet	*0.02500*		*106*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0253*		mg/kg wet	*0.02500*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0250*		mg/kg wet	*0.02500*		*100*	*30-150*			
LCS Dup										
Aroclor 1016	0.6	0.05	mg/kg wet	0.5000		111	40-140	6	30	
Aroclor 1016 [2C]	0.6	0.05	mg/kg wet	0.5000		114	40-140	5	30	
Aroclor 1260	0.6	0.05	mg/kg wet	0.5000		115	40-140	5	30	
Aroclor 1260 [2C]	0.6	0.05	mg/kg wet	0.5000		124	40-140	5	30	
Surrogate: Decachlorobiphenyl	*0.0277*		mg/kg wet	*0.02500*		*111*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0272*		mg/kg wet	*0.02500*		*109*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0269*		mg/kg wet	*0.02500*		*107*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0263*		mg/kg wet	*0.02500*		*105*	*30-150*			
Batch CK72911 - 3540C										

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK72911 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0247*		mg/kg wet	*0.02500*		*99*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0251*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0232*		mg/kg wet	*0.02500*		*93*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0239*		mg/kg wet	*0.02500*		*95*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		105	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		110	40-140			
Aroclor 1260	0.6	0.05	mg/kg wet	0.5000		111	40-140			
Aroclor 1260 [2C]	0.6	0.05	mg/kg wet	0.5000		119	40-140			
Surrogate: Decachlorobiphenyl	*0.0258*		mg/kg wet	*0.02500*		*103*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0261*		mg/kg wet	*0.02500*		*104*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0244*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0241*		mg/kg wet	*0.02500*		*96*	*30-150*			
LCS Dup										
Aroclor 1016	0.6	0.05	mg/kg wet	0.5000		113	40-140	7	30	
Aroclor 1016 [2C]	0.6	0.05	mg/kg wet	0.5000		124	40-140	12	30	
Aroclor 1260	0.6	0.05	mg/kg wet	0.5000		118	40-140	7	30	
Aroclor 1260 [2C]	0.6	0.05	mg/kg wet	0.5000		129	40-140	8	30	
Surrogate: Decachlorobiphenyl	*0.0268*		mg/kg wet	*0.02500*		*107*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0271*		mg/kg wet	*0.02500*		*109*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0261*		mg/kg wet	*0.02500*		*104*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0259*		mg/kg wet	*0.02500*		*104*	*30-150*			
8151A Chlorinated Herbicides										

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CK72927 - 3546										
Blank										
2,4,5-T	ND	0.010	mg/kg wet							
2,4,5-T [2C]	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex)	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	0.010	mg/kg wet							
2,4-D	ND	0.047	mg/kg wet							
2,4-D [2C]	ND	0.047	mg/kg wet							
2,4-DB	ND	0.048	mg/kg wet							
2,4-DB [2C]	ND	0.048	mg/kg wet							
Dalapon	ND	0.046	mg/kg wet							
Dalapon [2C]	ND	0.046	mg/kg wet							
Dicamba	ND	0.009	mg/kg wet							
Dicamba [2C]	ND	0.009	mg/kg wet							
Dichlorprop	ND	0.047	mg/kg wet							
Dichlorprop [2C]	ND	0.047	mg/kg wet							
Dinoseb	ND	0.048	mg/kg wet							
Dinoseb [2C]	ND	0.048	mg/kg wet							
MCPA	ND	2.32	mg/kg wet							
MCPA [2C]	ND	2.32	mg/kg wet							
MCPP	ND	2.35	mg/kg wet							
MCPP [2C]	ND	2.35	mg/kg wet							
Surrogate: DCAA	*0.264*		mg/kg wet	*0.2000*		*132*	*30-150*			
Surrogate: DCAA [2C]	*0.246*		mg/kg wet	*0.2000*		*123*	*30-150*			
LCS										
2,4,5-T	0.019	0.010	mg/kg wet	0.01900		102	40-140			
2,4,5-T [2C]	0.015	0.010	mg/kg wet	0.01900		80	40-140			
2,4,5-TP (Silvex)	0.019	0.010	mg/kg wet	0.01900		98	40-140			
2,4,5-TP (Silvex) [2C]	0.015	0.010	mg/kg wet	0.01900		80	40-140			
2,4-D	0.173	0.047	mg/kg wet	0.1880		92	40-140			
2,4-D [2C]	0.176	0.047	mg/kg wet	0.1880		93	40-140			
2,4-DB	0.182	0.048	mg/kg wet	0.1900		96	40-140			
2,4-DB [2C]	0.163	0.048	mg/kg wet	0.1900		86	40-140			
Dalapon	0.362	0.046	mg/kg wet	0.4550		80	40-140			
Dalapon [2C]	0.339	0.046	mg/kg wet	0.4550		74	40-140			
Dicamba	0.018	0.009	mg/kg wet	0.01880		94	40-140			
Dicamba [2C]	0.015	0.009	mg/kg wet	0.01880		80	40-140			
Dichlorprop	0.186	0.047	mg/kg wet	0.1880		99	40-140			
Dichlorprop [2C]	0.155	0.047	mg/kg wet	0.1880		82	40-140			
Dinoseb	0.018	0.048	mg/kg wet	0.09500		19	10-100			
Dinoseb [2C]	0.014	0.048	mg/kg wet	0.09500		15	10-100			
MCPA	17.9	2.32	mg/kg wet	18.60		96	40-140			
MCPA [2C]	14.4	2.32	mg/kg wet	18.60		77	40-140			
MCPP	16.7	2.35	mg/kg wet	18.80		89	40-140			
MCPP [2C]	15.3	2.35	mg/kg wet	18.80		81	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CK72927 - 3546										
Surrogate: DCAA	*0.236*		mg/kg wet	*0.2000*		*118*	*30-150*			
Surrogate: DCAA [2C]	*0.221*		mg/kg wet	*0.2000*		*110*	*30-150*			
LCS Dup										
2,4,5-T	0.021	0.010	mg/kg wet	0.01900		112	40-140	9	30	
2,4,5-T [2C]	0.018	0.010	mg/kg wet	0.01900		94	40-140	16	30	
2,4,5-TP (Silvex)	0.023	0.010	mg/kg wet	0.01900		122	40-140	22	30	
2,4,5-TP (Silvex) [2C]	0.016	0.010	mg/kg wet	0.01900		84	40-140	5	30	
2,4-D	0.234	0.047	mg/kg wet	0.1880		124	40-140	30	30	
2,4-D [2C]	0.196	0.047	mg/kg wet	0.1880		104	40-140	11	30	
2,4-DB	0.151	0.048	mg/kg wet	0.1900		80	40-140	18	30	
2,4-DB [2C]	0.116	0.048	mg/kg wet	0.1900		61	40-140	34	30	D+
Dalapon	0.409	0.046	mg/kg wet	0.4550		90	40-140	12	30	
Dalapon [2C]	0.392	0.046	mg/kg wet	0.4550		86	40-140	15	30	
Dicamba	0.021	0.009	mg/kg wet	0.01880		110	40-140	16	30	
Dicamba [2C]	0.018	0.009	mg/kg wet	0.01880		94	40-140	16	30	
Dichlorprop	0.209	0.047	mg/kg wet	0.1880		111	40-140	12	30	
Dichlorprop [2C]	0.172	0.047	mg/kg wet	0.1880		92	40-140	11	30	
Dinoseb	0.022	0.048	mg/kg wet	0.09500		23	10-100	21	30	
Dinoseb [2C]	0.018	0.048	mg/kg wet	0.09500		19	10-100	23	30	
MCPA	18.4	2.32	mg/kg wet	18.60		99	40-140	3	30	
MCPA [2C]	18.7	2.32	mg/kg wet	18.60		101	40-140	26	30	
MCPP	19.4	2.35	mg/kg wet	18.80		103	40-140	15	30	
MCPP [2C]	16.6	2.35	mg/kg wet	18.80		88	40-140	9	30	
Surrogate: DCAA	*0.265*		mg/kg wet	*0.2000*		*132*	*30-150*			
Surrogate: DCAA [2C]	*0.251*		mg/kg wet	*0.2000*		*126*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CK72909 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK72909 - 3546										
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.59*		mg/kg wet	*3.333*		*78*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK72909 - 3546										
Surrogate: 2,4,6-Tribromophenol	*5.06*		mg/kg wet	*5.000*		*101*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*4.24*		mg/kg wet	*5.000*		*85*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.88*		mg/kg wet	*3.333*		*86*	*30-130*			
Surrogate: 2-Fluorophenol	*4.18*		mg/kg wet	*5.000*		*84*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.03*		mg/kg wet	*3.333*		*91*	*30-130*			
Surrogate: Phenol-d6	*4.35*		mg/kg wet	*5.000*		*87*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.99*		mg/kg wet	*3.333*		*120*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.95	0.333	mg/kg wet	3.333		88	40-140			
1,2-Dichlorobenzene	2.84	0.333	mg/kg wet	3.333		85	40-140			
1,3-Dichlorobenzene	2.86	0.333	mg/kg wet	3.333		86	40-140			
1,4-Dichlorobenzene	2.77	0.333	mg/kg wet	3.333		83	40-140			
2,4,5-Trichlorophenol	3.46	0.333	mg/kg wet	3.333		104	30-130			
2,4,6-Trichlorophenol	3.34	0.333	mg/kg wet	3.333		100	30-130			
2,4-Dichlorophenol	3.00	0.333	mg/kg wet	3.333		90	30-130			
2,4-Dimethylphenol	3.02	0.333	mg/kg wet	3.333		90	30-130			
2,4-Dinitrophenol	2.70	1.67	mg/kg wet	3.333		81	30-130			
2,4-Dinitrotoluene	3.22	0.333	mg/kg wet	3.333		97	40-140			
2,6-Dinitrotoluene	3.03	0.333	mg/kg wet	3.333		91	40-140			
2-Chloronaphthalene	2.90	0.333	mg/kg wet	3.333		87	40-140			
2-Chlorophenol	2.78	0.333	mg/kg wet	3.333		83	30-130			
2-Methylnaphthalene	2.76	0.333	mg/kg wet	3.333		83	40-140			
2-Methylphenol	2.78	0.333	mg/kg wet	3.333		83	30-130			
2-Nitrophenol	3.08	0.333	mg/kg wet	3.333		92	30-130			
3,3´-Dichlorobenzidine	2.48	0.667	mg/kg wet	3.333		74	40-140			
3+4-Methylphenol	5.75	0.667	mg/kg wet	6.667		86	30-130			
4-Bromophenyl-phenylether	3.17	0.333	mg/kg wet	3.333		95	40-140			
4-Chloroaniline	2.25	0.667	mg/kg wet	3.333		68	40-140			
4-Nitrophenol	2.90	1.67	mg/kg wet	3.333		87	30-130			
Acenaphthene	2.93	0.333	mg/kg wet	3.333		88	40-140			
Acenaphthylene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Acetophenone	2.87	0.667	mg/kg wet	3.333		86	40-140			
Aniline	2.57	1.67	mg/kg wet	3.333		77	40-140			
Anthracene	3.13	0.333	mg/kg wet	3.333		94	40-140			
Azobenzene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Benzo(a)anthracene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Benzo(a)pyrene	3.16	0.167	mg/kg wet	3.333		95	40-140			
Benzo(b)fluoranthene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Benzo(g,h,i)perylene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Benzo(k)fluoranthene	3.16	0.333	mg/kg wet	3.333		95	40-140			
bis(2-Chloroethoxy)methane	2.90	0.333	mg/kg wet	3.333		87	40-140			
bis(2-Chloroethyl)ether	3.24	0.333	mg/kg wet	3.333		97	40-140			
bis(2-chloroisopropyl)Ether	2.59	0.333	mg/kg wet	3.333		78	40-140			
bis(2-Ethylhexyl)phthalate	3.09	0.333	mg/kg wet	3.333		93	40-140			
Butylbenzylphthalate	3.08	0.333	mg/kg wet	3.333		92	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK72909 - 3546										
Chrysene	3.07	0.167	mg/kg wet	3.333		92	40-140			
Dibenzo(a,h)Anthracene	3.24	0.167	mg/kg wet	3.333		97	40-140			
Dibenzofuran	3.00	0.333	mg/kg wet	3.333		90	40-140			
Diethylphthalate	3.10	0.333	mg/kg wet	3.333		93	40-140			
Dimethylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140			
Di-n-butylphthalate	3.16	0.333	mg/kg wet	3.333		95	40-140			
Di-n-octylphthalate	3.25	0.333	mg/kg wet	3.333		97	40-140			
Fluoranthene	3.05	0.333	mg/kg wet	3.333		92	40-140			
Fluorene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Hexachlorobenzene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Hexachlorobutadiene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Hexachloroethane	2.86	0.333	mg/kg wet	3.333		86	40-140			
Indeno(1,2,3-cd)Pyrene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Isophorone	2.68	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.91	0.333	mg/kg wet	3.333		87	40-140			
Nitrobenzene	3.03	0.333	mg/kg wet	3.333		91	40-140			
N-Nitrosodimethylamine	2.84	0.333	mg/kg wet	3.333		85	40-140			
Pentachlorophenol	3.16	1.67	mg/kg wet	3.333		95	30-130			
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Phenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
Pyrene	2.95	0.333	mg/kg wet	3.333		89	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*3.07*		mg/kg wet	*3.333*		*92*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*6.12*		mg/kg wet	*5.000*		*122*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*4.94*		mg/kg wet	*5.000*		*99*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.45*		mg/kg wet	*3.333*		*103*	*30-130*			
Surrogate: 2-Fluorophenol	*5.04*		mg/kg wet	*5.000*		*101*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.47*		mg/kg wet	*3.333*		*104*	*30-130*			
Surrogate: Phenol-d6	*5.09*		mg/kg wet	*5.000*		*102*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.56*		mg/kg wet	*3.333*		*107*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	3.09	0.333	mg/kg wet	3.333		93	40-140	5	30	
1,2-Dichlorobenzene	2.94	0.333	mg/kg wet	3.333		88	40-140	3	30	
1,3-Dichlorobenzene	2.87	0.333	mg/kg wet	3.333		86	40-140	0.3	30	
1,4-Dichlorobenzene	2.84	0.333	mg/kg wet	3.333		85	40-140	2	30	
2,4,5-Trichlorophenol	3.52	0.333	mg/kg wet	3.333		106	30-130	2	30	
2,4,6-Trichlorophenol	3.38	0.333	mg/kg wet	3.333		101	30-130	1	30	
2,4-Dichlorophenol	3.27	0.333	mg/kg wet	3.333		98	30-130	9	30	
2,4-Dimethylphenol	3.30	0.333	mg/kg wet	3.333		99	30-130	9	30	
2,4-Dinitrophenol	3.00	1.67	mg/kg wet	3.333		90	30-130	10	30	
2,4-Dinitrotoluene	3.52	0.333	mg/kg wet	3.333		106	40-140	9	30	
2,6-Dinitrotoluene	3.23	0.333	mg/kg wet	3.333		97	40-140	6	30	
2-Chloronaphthalene	2.83	0.333	mg/kg wet	3.333		85	40-140	2	30	
2-Chlorophenol	3.05	0.333	mg/kg wet	3.333		91	30-130	9	30	
2-Methylnaphthalene	3.03	0.333	mg/kg wet	3.333		91	40-140	9	30	
2-Methylphenol	3.15	0.333	mg/kg wet	3.333		94	30-130	12	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

Quality Control Data

8270D Semi-Volatile Organic Compounds

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CK72909 - 3546										
2-Nitrophenol	3.29	0.333	mg/kg wet	3.333		99	30-130	7	30	
3,3´-Dichlorobenzidine	2.38	0.667	mg/kg wet	3.333		71	40-140	4	30	
3+4-Methylphenol	6.58	0.667	mg/kg wet	6.667		99	30-130	14	30	
4-Bromophenyl-phenylether	3.21	0.333	mg/kg wet	3.333		96	40-140	1	30	
4-Chloroaniline	2.37	0.667	mg/kg wet	3.333		71	40-140	5	30	
4-Nitrophenol	3.22	1.67	mg/kg wet	3.333		97	30-130	11	30	
Acenaphthene	3.06	0.333	mg/kg wet	3.333		92	40-140	4	30	
Acenaphthylene	3.11	0.333	mg/kg wet	3.333		93	40-140	4	30	
Acetophenone	3.21	0.667	mg/kg wet	3.333		96	40-140	11	30	
Aniline	2.86	1.67	mg/kg wet	3.333		86	40-140	11	30	
Anthracene	3.28	0.333	mg/kg wet	3.333		98	40-140	5	30	
Azobenzene	3.31	0.333	mg/kg wet	3.333		99	40-140	6	30	
Benzo(a)anthracene	3.22	0.333	mg/kg wet	3.333		97	40-140	4	30	
Benzo(a)pyrene	3.32	0.167	mg/kg wet	3.333		100	40-140	5	30	
Benzo(b)fluoranthene	3.42	0.333	mg/kg wet	3.333		103	40-140	6	30	
Benzo(g,h,i)perylene	3.30	0.333	mg/kg wet	3.333		99	40-140	5	30	
Benzo(k)fluoranthene	3.31	0.333	mg/kg wet	3.333		99	40-140	4	30	
bis(2-Chloroethoxy)methane	3.11	0.333	mg/kg wet	3.333		93	40-140	7	30	
bis(2-Chloroethyl)ether	3.45	0.333	mg/kg wet	3.333		103	40-140	6	30	
bis(2-chloroisopropyl)Ether	2.79	0.333	mg/kg wet	3.333		84	40-140	7	30	
bis(2-Ethylhexyl)phthalate	3.67	0.333	mg/kg wet	3.333		110	40-140	17	30	
Butylbenzylphthalate	3.58	0.333	mg/kg wet	3.333		107	40-140	15	30	
Chrysene	3.18	0.167	mg/kg wet	3.333		95	40-140	3	30	
Dibenzo(a,h)Anthracene	3.41	0.167	mg/kg wet	3.333		102	40-140	5	30	
Dibenzofuran	3.17	0.333	mg/kg wet	3.333		95	40-140	6	30	
Diethylphthalate	3.42	0.333	mg/kg wet	3.333		103	40-140	10	30	
Dimethylphthalate	3.33	0.333	mg/kg wet	3.333		100	40-140	6	30	
Di-n-butylphthalate	3.52	0.333	mg/kg wet	3.333		106	40-140	11	30	
Di-n-octylphthalate	3.85	0.333	mg/kg wet	3.333		115	40-140	17	30	
Fluoranthene	3.12	0.333	mg/kg wet	3.333		94	40-140	2	30	
Fluorene	3.30	0.333	mg/kg wet	3.333		99	40-140	6	30	
Hexachlorobenzene	3.23	0.333	mg/kg wet	3.333		97	40-140	0.5	30	
Hexachlorobutadiene	3.00	0.333	mg/kg wet	3.333		90	40-140	0.07	30	
Hexachloroethane	2.76	0.333	mg/kg wet	3.333		83	40-140	4	30	
Indeno(1,2,3-cd)Pyrene	3.39	0.333	mg/kg wet	3.333		102	40-140	5	30	
Isophorone	2.95	0.333	mg/kg wet	3.333		88	40-140	9	30	
Naphthalene	3.08	0.333	mg/kg wet	3.333		92	40-140	6	30	
Nitrobenzene	3.22	0.333	mg/kg wet	3.333		97	40-140	6	30	
N-Nitrosodimethylamine	2.72	0.333	mg/kg wet	3.333		82	40-140	4	30	
Pentachlorophenol	3.29	1.67	mg/kg wet	3.333		99	30-130	4	30	
Phenanthrene	3.12	0.333	mg/kg wet	3.333		94	40-140	4	30	
Phenol	3.21	0.333	mg/kg wet	3.333		96	30-130	12	30	
Pyrene	3.34	0.333	mg/kg wet	3.333		100	40-140	12	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.98*		mg/kg wet	*3.333*		*90*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*6.01*		mg/kg wet	*5.000*		*120*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK72909 - 3546										
Surrogate: 2-Chlorophenol-d4	*5.24*		mg/kg wet	*5.000*		*105*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.35*		mg/kg wet	*3.333*		*100*	*30-130*			
Surrogate: 2-Fluorophenol	*5.20*		mg/kg wet	*5.000*		*104*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.60*		mg/kg wet	*3.333*		*108*	*30-130*			
Surrogate: Phenol-d6	*5.56*		mg/kg wet	*5.000*		*111*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.91*		mg/kg wet	*3.333*		*117*	*30-130*			
Classical Chemistry										
Batch CK72949 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	200	mg/kg							
Total Organic Carbon (2)	ND	200	mg/kg							
Total Organic Carbon (Average)	ND	200	mg/kg dry wt							
LCS										
Total Organic Carbon (1)	10400	200	mg/kg	10000		104	80-120			
Total Organic Carbon (2)	10800	200	mg/kg	10000		108	80-120			
Total Organic Carbon (Average)	10600	200	mg/kg dry wt							
LCS Dup										
Total Organic Carbon (1)	10400	200	mg/kg	10000		104	80-120	0.8	200	
Total Organic Carbon (2)	10400	200	mg/kg	10000		104	80-120	4	200	
Total Organic Carbon (Average)	10400	200	mg/kg dry wt							
Batch CL70653 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	200	mg/kg							
Total Organic Carbon (2)	ND	200	mg/kg							
Total Organic Carbon (Average)	ND	200	mg/kg dry wt							
LCS										
Total Organic Carbon (1)	11400	200	mg/kg	10000		114	80-120			
Total Organic Carbon (2)	11500	200	mg/kg	10000		115	80-120			
Total Organic Carbon (Average)	11400	200	mg/kg dry wt							
LCS Dup										
Total Organic Carbon (1)	11300	200	mg/kg	10000		113	80-120	0.4	200	
Total Organic Carbon (2)	11300	200	mg/kg	10000		113	80-120	1	200	
Total Organic Carbon (Average)	11300	200	mg/kg dry wt							
Reference										
Total Organic Carbon (Average)	1.70		mg/kg dry wt							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711726

Notes and Definitions

Z-09	ND
Z-08	See Attached
XH	Peaks found in the retention time window for MCPP did not confirm by GC/MS.
X*	RSD of replicate analysis >25%, reanalysis produced similar results, sample is non-homogeneous.
U	Analyte included in the analysis, but not detected
R-	Standard Reference Material is biased low (R-).
Q	Calibration required quadratic regression (Q).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
#	Modified result
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

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Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Prepared Date:

December 12, 2017

Report Information:

Pace Project #: 10412845
Sample Receipt Date: 12/01/2017
Client Project #: 1711726
Client Sub PO #: B02407
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:

Joanne Richardson

December 12, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on eight samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 35-75%. Except for one low value, which was flagged "R" on the results table, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

A laboratory spike sample was also prepared using clean reference matrix that had been fortified with native standard materials. The recoveries of the native compounds ranged from 107-128%. These results were within the target range for the method. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

The response obtained for the labeled OCDD in calibration standard analysis F171209A_17 was outside the target range. As specified in the method, the average of the daily response factors for this compound was used in the calculations for the samples from this runshift. The affected values were flagged "Y" on the results tables. It should be noted that the accuracy of the native congener determinations was not impacted by this deviation.

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

10412845

ESS Laboratory PACE

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1711726

Turn Time ___ Standard Other **DUE 12/7/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

MA-MCP Navy USACE CT DEP Other_____

Electonic Deliverables *Excel Access *PDF

Co. Name: ESS Laboratory	Project #:	Project Name: 1711726	
Contact Person: Shawn Morrell	Proj. Location:		
Address: ext 3083	City , State:	Zip:	PO #: B02407
Tel.:	email: smorrell@thielsch.com		

Analysis: Dioxin EPA 8290

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Dioxin EPA 8290									
	11/28/17	1420	G	S	1711726-01	1	1	AG		X									001
	11/28/17	1423	G	S	1711726-02	1	1	AG		X									002
	11/28/17	1426	G	S	1711726-03	1	1	AG		X									003
	11/28/17	1430	G	S	1711726-04	1	1	AG		X									004
	11/28/17	1434	G	S	1711726-05	1	1	AG		X									005
	11/28/17	1438	G	S	1711726-06	1	1	AG		X									006
	11/28/17	1442	G	S	1711726-07	1	1	AG		X									007
	11/28/17	1446	G	S	1711726-08	1	1	AG		X									008
	11/28/17	1450	G	S	1711726-09	1	1	AG		X									009
	11/28/17	1455	G	S	1711726-10	1	1	AG		X									010

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present X Yes ____ No

Seals Intact X Yes ____ No ~~NA: X~~ 12/1/17

Cooler Temperature: 5.6°C JD

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
11/29/17 1455	UPS		
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
	12/1/17 1000		

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

CHANGES MADE - 12/1/17 - ML

Report No....10412845_8290FC_DFR

ESS Laboratory PACE

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1711726

Turn Time ___ Standard Other **DUE 12/7/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

MA-MCP Navy USACE CT DEP Other_____

Electonic Deliverables *Excel Access *PDF

Co. Name: ESS Laboratory	Project #:	Project Name: 1711726	
Contact Person: Shawn Morrell	Proj. Location:		
Address: ext 3083	City , State:	Zip:	PO #: B02407
Tel.	email: smorrell@thielsch.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: Dioxin EPA 8290							
	~~11/28/17~~	~~1420~~	~~G~~	~~S~~	~~1711726-01~~	~~1~~	~~1~~	~~AG~~		~~X~~							
	~~11/28/17~~	~~1423~~	~~G~~	~~S~~	~~1711726-02~~	~~1~~	~~1~~	~~AG~~		~~X~~							
	11/28/17	1426	G	S	1711726-03	1	1	AG		X							
	11/28/17	1430	G	S	1711726-04	1	1	AG		X							
	11/28/17	1434	G	S	1711726-05	1	1	AG		X							
	11/28/17	1438	G	S	1711726-06	1	1	AG		X							
	11/28/17	1442	G	S	1711726-07	1	1	AG		X							
	11/28/17	1446	G	S	1711726-08	1	1	AG		X							
	11/28/17	1450	G	S	1711726-09	1	1	AG		X							
	11/28/17	1455	G	S	1711726-10	1	1	AG		X							

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
11/29/17 1455	UPS		
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 30Aug2017 Page 1 of 2
	Document No.: **F-MN-L-213-rev.21**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: ESS Laboratory

Project #: WO#: 10412845

10412845

Courier: ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 1Z0357497014594137 00

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 5.1 **Cooler Temp Corrected (°C):** 5.6 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 12/1/17

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☐ Yes	☒ No		3.
Sampler Name and/or Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☒ Yes	☐ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution: Revised chain of custody provided by Marc Levesque on 12-1-17.

Project Manager Review: Joanne Richardson **Date:** 12-1-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711726-03			
Lab Sample ID	10412845003			
Filename	U171208B_10			
Injected By	ZMS			
Total Amount Extracted	11.3 g	Matrix	Solid	
% Moisture	4.0	Dilution	NA	
Dry Weight Extracted	10.8 g	Collected	11/28/2017	14:26
ICAL ID	U171107	Received	12/01/2017	10:00
CCal Filename(s)	U171208A_17 & U171208B_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58992	Analyzed	12/09/2017	06:00

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	64
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	56
				1,2,3,7,8-PeCDF-13C	2.00	67
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	69
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	68
				1,2,3,4,7,8-HxCDF-13C	2.00	71
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	59
				1,2,3,4,7,8-HxCDD-13C	2.00	69
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	65
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	63
				1,2,3,4,7,8,9-HpCDF-13C	2.00	59
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	50
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	56
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711726-04			
Lab Sample ID	10412845004			
Filename	U171208B_11			
Injected By	ZMS			
Total Amount Extracted	11.1 g	Matrix	Solid	
% Moisture	4.0	Dilution	NA	
Dry Weight Extracted	10.7 g	Collected	11/28/2017	14:30
ICAL ID	U171107	Received	12/01/2017	10:00
CCal Filename(s)	U171208A_17 & U171208B_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58992	Analyzed	12/09/2017	06:45

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	65
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	61
				1,2,3,7,8-PeCDF-13C	2.00	61
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	61
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	62
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	63
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	59
				1,2,3,4,7,8-HxCDD-13C	2.00	61
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	56
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	56
				1,2,3,4,7,8,9-HpCDF-13C	2.00	54
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	61
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	46
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	61
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711726-05		
Lab Sample ID	10412845005		
Filename	U171208B_12		
Injected By	ZMS		
Total Amount Extracted	11.0 g	Matrix	Solid
% Moisture	3.7	Dilution	NA
Dry Weight Extracted	10.6 g	Collected	11/28/2017 14:34
ICAL ID	U171107	Received	12/01/2017 10:00
CCal Filename(s)	U171208A_17 & U171208B_17	Extracted	12/04/2017 14:40
Method Blank ID	BLANK-58992	Analyzed	12/09/2017 07:29

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	54
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	45
				1,2,3,7,8-PeCDF-13C	2.00	49
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	51
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	48
				1,2,3,4,7,8-HxCDF-13C	2.00	77
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	47
				1,2,3,4,7,8-HxCDD-13C	2.00	73
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	67
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	65
				1,2,3,4,7,8,9-HpCDF-13C	2.00	54
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	43
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	46
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711726-06			
Lab Sample ID	10412845006			
Filename	U171208B_13			
Injected By	ZMS			
Total Amount Extracted	10.8 g	Matrix	Solid	
% Moisture	3.7	Dilution	NA	
Dry Weight Extracted	10.4 g	Collected	11/28/2017	14:38
ICAL ID	U171107	Received	12/01/2017	10:00
CCal Filename(s)	U171208A_17 & U171208B_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58992	Analyzed	12/09/2017	08:14

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	68
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	63
				1,2,3,7,8-PeCDF-13C	2.00	62
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	62
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	63
				1,2,3,4,7,8-HxCDF-13C	2.00	71
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	64
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	68
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	62
				1,2,3,4,7,8,9-HpCDF-13C	2.00	59
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	67
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	49
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	63
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711726-07			
Lab Sample ID	10412845007			
Filename	U171212A_04			
Injected By	SMT			
Total Amount Extracted	10.9 g	Matrix	Solid	
% Moisture	3.6	Dilution	NA	
Dry Weight Extracted	10.5 g	Collected	11/28/2017	14:42
ICAL ID	U171107	Received	12/01/2017	10:00
CCal Filename(s)	U171212A_01 & U171212A_08	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58992	Analyzed	12/12/2017	11:31

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	55
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	46
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	53
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	48
				1,2,3,4,7,8-HxCDF-13C	2.00	66
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	71
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	50
				1,2,3,4,7,8-HxCDD-13C	2.00	58
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	62
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	53
				1,2,3,4,7,8,9-HpCDF-13C	2.00	43
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	49
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	35 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	47
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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R = Recovery outside target range

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711726-08			
Lab Sample ID	10412845008			
Filename	U171208B_15			
Injected By	ZMS			
Total Amount Extracted	11.6 g	Matrix	Solid	
% Moisture	4.0	Dilution	NA	
Dry Weight Extracted	11.1 g	Collected	11/28/2017	14:46
ICAL ID	U171107	Received	12/01/2017	10:00
CCal Filename(s)	U171208A_17 & U171208B_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58992	Analyzed	12/09/2017	09:43

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	66
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	63
				1,2,3,7,8-PeCDF-13C	2.00	62
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	64
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	64
				1,2,3,4,7,8-HxCDF-13C	2.00	64
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	66
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	68
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	58
				1,2,3,4,7,8-HxCDD-13C	2.00	68
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	60
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	60
				1,2,3,4,7,8,9-HpCDF-13C	2.00	57
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	49
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	62
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711726-09			
Lab Sample ID	10412845009			
Filename	F171209A_13			
Injected By	BAL			
Total Amount Extracted	11.9 g	Matrix	Solid	
% Moisture	16.4	Dilution	NA	
Dry Weight Extracted	9.95 g	Collected	11/28/2017	14:50
ICAL ID	F171206	Received	12/01/2017	10:00
CCal Filename(s)	F171209A_01 & F171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58992	Analyzed	12/09/2017	21:24

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	54
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	55
				1,2,3,7,8-PeCDF-13C	2.00	56
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	57
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	64
				1,2,3,4,7,8-HxCDF-13C	2.00	51
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	51
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	51
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	45
				1,2,3,4,7,8-HxCDD-13C	2.00	54
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	49
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	45
				1,2,3,4,7,8,9-HpCDF-13C	2.00	40
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	47
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	40 Y
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	52
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Y = Calculated using average of daily RFs

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711726-10			
Lab Sample ID	10412845010			
Filename	F171209A_14			
Injected By	BAL			
Total Amount Extracted	11.3 g	Matrix	Solid	
% Moisture	18.2	Dilution	NA	
Dry Weight Extracted	9.24 g	Collected	11/28/2017	14:55
ICAL ID	F171206	Received	12/01/2017	10:00
CCal Filename(s)	F171209A_01 & F171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58992	Analyzed	12/09/2017	22:07

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	62
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	61
				1,2,3,7,8-PeCDF-13C	2.00	63
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	66
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	71
				1,2,3,4,7,8-HxCDF-13C	2.00	64
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	66
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	65
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	52
				1,2,3,4,7,8-HxCDD-13C	2.00	68
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	63
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	56
				1,2,3,4,7,8,9-HpCDF-13C	2.00	48
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	57
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	47 Y
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	58
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Y = Calculated using average of daily RFs

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Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-58992	Matrix	Solid
Filename	Y171207A_15	Dilution	NA
Total Amount Extracted	20.3 g	Extracted	12/04/2017 14:40
ICAL ID	Y171107	Analyzed	12/08/2017 00:48
CCal Filename(s)	Y171207A_05 & Y171207A_19	Injected By	SMT

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	84
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	72
				1,2,3,7,8-PeCDF-13C	2.00	89
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	91
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	91
				1,2,3,4,7,8-HxCDF-13C	2.00	92
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	88
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	93
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	82
				1,2,3,4,7,8-HxCDD-13C	2.00	90
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	70
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	69
				1,2,3,4,7,8,9-HpCDF-13C	2.00	68
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	71
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	67
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-58993		
Filename	Y171207A_07	Matrix	Solid
Total Amount Extracted	20.9 g	Dilution	NA
ICAL ID	Y171107	Extracted	12/04/2017 14:40
CCal Filename(s)	Y171207A_05 & Y171207A_19	Analyzed	12/07/2017 18:09
Method Blank ID	BLANK-58992	Injected By	

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.24	122	2,3,7,8-TCDF-13C	2.0	93
Total TCDF				2,3,7,8-TCDD-13C	2.0	80
				1,2,3,7,8-PeCDF-13C	2.0	101
2,3,7,8-TCDD	0.20	0.24	122	2,3,4,7,8-PeCDF-13C	2.0	104
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	103
				1,2,3,4,7,8-HxCDF-13C	2.0	101
1,2,3,7,8-PeCDF	1.0	1.2	124	1,2,3,6,7,8-HxCDF-13C	2.0	91
2,3,4,7,8-PeCDF	1.0	1.1	110	2,3,4,6,7,8-HxCDF-13C	2.0	100
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	94
				1,2,3,4,7,8-HxCDD-13C	2.0	95
1,2,3,7,8-PeCDD	1.0	1.2	118	1,2,3,6,7,8-HxCDD-13C	2.0	79
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	75
				1,2,3,4,7,8,9-HpCDF-13C	2.0	78
1,2,3,4,7,8-HxCDF	1.0	1.2	120	1,2,3,4,6,7,8-HpCDD-13C	2.0	80
1,2,3,6,7,8-HxCDF	1.0	1.2	120	OCDD-13C	4.0	72
2,3,4,6,7,8-HxCDF	1.0	1.1	113			
1,2,3,7,8,9-HxCDF	1.0	1.1	110	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	1.3	128	2,3,7,8-TCDD-37Cl4	0.20	84
1,2,3,6,7,8-HxCDD	1.0	1.2	118			
1,2,3,7,8,9-HxCDD	1.0	1.2	116			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	1.2	117			
1,2,3,4,7,8,9-HpCDF	1.0	1.1	110			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	1.1	107			
Total HpCDD						
OCDF	2.0	2.5	124			
OCDD	2.0	2.4	120			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711726
Date Received: 11/28/2017
Project Due Date: 12/5/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.1 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 1-10
    Analysis: **Dioxin**
    TAT: 5 day
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: 11/28/17 Time: 3248 By:

Sample Receiving Notes:

Trip blank added RL 11/28/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	185504	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	185523	Yes	NA	Yes	VOA Vial - Other	Other	
01	185524	Yes	NA	Yes	VOA Vial - Other	Other	
01	185570	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	185571	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
01	185573	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	185574	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	185503	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	185521	Yes	NA	Yes	VOA Vial - Other	Other	
02	185522	Yes	NA	Yes	VOA Vial - Other	Other	
02	185565	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	185566	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
02	185568	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	185569	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	185502	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	185519	Yes	NA	Yes	VOA Vial - Other	Other	
03	185520	Yes	NA	Yes	VOA Vial - Other	Other	
03	185560	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	185561	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
03	185563	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	185564	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	185501	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	185517	Yes	NA	Yes	VOA Vial - Other	Other	
04	185518	Yes	NA	Yes	VOA Vial - Other	Other	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711726
Date Received: 11/28/2017

04	185555	Yes	NA	Yes	4 oz. Jar - Unpres	NP
04	185556	Yes	NA	Yes	2 oz. Jar - Unpres	NP
04	185558	Yes	NA	Yes	8 oz. Jar - Unpres	NP
04	185559	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	185500	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	185515	Yes	NA	Yes	VOA Vial - Other	Other
05	185516	Yes	NA	Yes	VOA Vial - Other	Other
05	185550	Yes	NA	Yes	4 oz. Jar - Unpres	NP
05	185551	Yes	NA	Yes	2 oz. Jar - Unpres	NP
05	185553	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	185554	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	185499	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	185513	Yes	NA	Yes	VOA Vial - Other	Other
06	185514	Yes	NA	Yes	VOA Vial - Other	Other
06	185545	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	185546	Yes	NA	Yes	2 oz. Jar - Unpres	NP
06	185548	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	185549	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	185498	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	185511	Yes	NA	Yes	VOA Vial - Other	Other
07	185512	Yes	NA	Yes	VOA Vial - Other	Other
07	185540	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	185541	Yes	NA	Yes	2 oz. Jar - Unpres	NP
07	185543	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	185544	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	185497	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	185509	Yes	NA	Yes	VOA Vial - Other	Other
08	185510	Yes	NA	Yes	VOA Vial - Other	Other
08	185535	Yes	NA	Yes	4 oz. Jar - Unpres	NP
08	185536	Yes	NA	Yes	2 oz. Jar - Unpres	NP
08	185538	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	185539	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	185496	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	185507	Yes	NA	Yes	VOA Vial - Other	Other
09	185508	Yes	NA	Yes	VOA Vial - Other	Other
09	185530	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	185531	Yes	NA	Yes	2 oz. Jar - Unpres	NP
09	185533	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	185534	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	185495	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	185505	Yes	NA	Yes	VOA Vial - Other	Other
10	185506	Yes	NA	Yes	VOA Vial - Other	Other
10	185525	Yes	NA	Yes	4 oz. Jar - Unpres	NP
10	185526	Yes	NA	Yes	2 oz. Jar - Unpres	NP
10	185528	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	185529	Yes	NA	Yes	8 oz. Jar - Unpres	NP
11	185575	Yes	NA	Yes	VOA Vial - Methanol	MeOH
11	185576	Yes	NA	Yes	VOA Vial - Other	Other

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: [signature] Date & Time: 11/28/17 2035
Reviewed By: [signature] Date & Time: 11/28/17 2050
Delivered By: [signature] 11/28/17 2050

changes made 11/29/17 - ML

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1711726

Turn Time: 5-Day Rush
Regulatory State
Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits: S-1
Electonic Deliverables: ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	11/28/17	2:20	Grab	Soil	Type A - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
02	11/28/17	2:23	Grab	Soil	Type A - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X
03	11/28/17	2:26	Grab	Soil	Type A - Capping Sand - 004	X	X	X	X	X	X	X	X	X	X	X
04	11/28/17	2:30	Grab	Soil	Type A - Capping Sand - 005	X	X	X	X	X	X	X	X	X	X	X
05	11/28/17	2:34	Grab	Soil	Type A - Capping Sand - 006	X	X	X	X	X	X	X	X	X	X	X
06	11/28/17	2:38	Grab	Soil	Type A - Capping Sand - 007	X	X	X	X	X	X	X	X	X	X	X
07	11/28/17	2:42	Grab	Soil	Type A - Capping Sand - 008	X	X	X	X	X	X	X	X	X	X	X
08	11/28/17	2:46	Grab	Soil	Type A - Capping Sand - 009	X	X	X	X	X	X	X	X	X	X	X
09	11/28/17	2:50	Grab	Soil	Type C - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
10	11/28/17	2:55	Grab	Soil	Type C - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X
11					Trip blank											

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
Number of Containers per Sample:

Laboratory Use Only
Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 1.1

Sampled by : Aggregate Industries QC
Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11/28 4:15	11/28/17 16:17	11/28/17 19:05	11/28/17 1955
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilson 11/28 4:15			

SPS

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab #	1711726
Turn Time	5-Day Rush
Regulatory State	
Reporting Limits	S-1
Electonic Deliverables	☑ Limit Checker ☐ Standard Excel ☐ Other (Please Specify →)

Is this project for any of the following?: ○ CT RCP ◉ MA MCP ○ RGP

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	11/28/17	2:20	Grab	Soil	Type A - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
02	11/28/17	2:23	Grab	Soil	Type A - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X
03	11/28/17	2:26	Grab	Soil	Type A - Capping Sand - 004	X	X	X	X	X	X	X	X	X	X	X
04	11/28/17	2:30	Grab	Soil	Type A - Capping Sand - 005	X	X	X	X	X	X	X	X	X	X	X
05	11/28/17	2:34	Grab	Soil	Type A - Capping Sand - 006	X	X	X	X	X	X	X	X	X	X	X
06	11/28/17	2:38	Grab	Soil	Type A - Capping Sand - 007	X	X	X	X	X	X	X	X	X	X	X
07	11/28/17	2:42	Grab	Soil	Type A - Capping Sand - 008	X	X	X	X	X	X	X	X	X	X	X
08	11/28/17	2:46	Grab	Soil	Type A - Capping Sand - 009	X	X	X	X	X	X	X	X	X	X	X
09	11/28/17	2:50	Grab	Soil	Type C - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
10	11/28/17	2:55	Grab	Soil	Type C - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X
11					Trip blank											

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 1.1

Sampled by : Aggregate Industries QC

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 11/28 4:15	[signature] 11/28/17 16:17	[signature] 11/28/17 19:05	[signature] 11/28/17 1955
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilson 11/28 4:15			

SPS

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1711796

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 2:34 pm, Dec 18, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses
Pace Analytical - Minneapolis, MN Dioxin

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

SAMPLE RECEIPT

The following samples were received on November 30, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Low Level VOA vials were frozen by ESS Laboratory on November 30, 2017 at 19:53.

Lab Number	Sample Name	Matrix	Analysis
1711796-01	Type A - Capping Sand -010	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711796-02	Type A - Capping Sand -011	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711796-03	Type A - Capping Sand -012	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711796-04	Type A - Capping Sand -013	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711796-05	Type A - Capping Sand -014	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711796-06	Type C - Capping Sand -004	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711796-07	Type C - Capping Sand -005	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711796-08	Type C - Capping Sand -006	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711796-09	Type C - Capping Sand -007	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1711796-10	Type C - Capping Sand -008	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

C7L0012-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
sec-Butylbenzene (23% @ 20%)

C7L0040-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
sec-Butylbenzene (25% @ 20%)

CL70426-BS1 **Blank Spike recovery is below lower control limit (B-).**
Dichlorodifluoromethane (67% @ 70-130%)

CL70426-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Dichlorodifluoromethane (64% @ 70-130%)

8151A Chlorinated Herbicides

1711796-07 **Modified result**
MCPP , MCPP [2C]

1711796-07 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

1711796-09 **Surrogate recovery(ies) below lower control limit (S-).**
DCAA [2C] (27% @ 30-150%)

C7L0076-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4,5-T (20% @ 15%), 2,4,5-TP (Silvex) (18% @ 15%), 2,4-D (17% @ 15%), 2,4-DB (19% @ 15%), Dichlorprop (16% @ 15%), Dinoseb (21% @ 15%), MCPP (16% @ 15%)

CL70139-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Dinoseb (38% @ 30%), Dinoseb [2C] (41% @ 30%)

CL70530-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Dalapon [2C] (41% @ 30%)

8270D Semi-Volatile Organic Compounds

C7L0008-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dichlorophenol (100% @ 80-120%), 2,4-Dinitrotoluene (92% @ 80-120%)

C7L0008-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (69% @ 80-120%)

C7L0008-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (31% @ 20%), 2-Methylphenol (32% @ 20%), 4-Nitrophenol (31% @ 20%), Benzo(k)fluoranthene (22% @ 20%), Fluorene (25% @ 20%), Pentachlorophenol (26% @ 20%)

C7L0009-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dichlorophenol (108% @ 80-120%), 2,4-Dinitrotoluene (109% @ 80-120%)

C7L0009-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (101% @ 80-120%), Pentachlorophenol (94% @ 80-120%)

C7L0009-CCV1 **Surrogate recovery(ies) above upper control limit (S+).**
2,4,6-Tribromophenol (122% @ 80-120%)

C7L0022-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (82% @ 80-120%), Pentachlorophenol (82% @ 80-120%)

C7L0022-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
N-Nitrosodimethylamine (24% @ 20%)

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1711796

C7L0051-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (69% @ 80-120%), Pentachlorophenol (81% @ 80-120%)

C7L0051-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (31% @ 20%), N-Nitrosodimethylamine (26% @ 20%)

CL70110-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Hexachloroethane (33% @ 30%)

Classical Chemistry

1711796-01 **RSD >25% between replicate analysis, samples non-homogeneous.**
Total Organic Carbon (Average)

1711796-04 **RSD >25% between replicate analysis, samples non-homogeneous.**
Total Organic Carbon (Average)

1711796-05 **RSD >25% between replicate analysis, samples non-homogeneous.**
Total Organic Carbon (Average)

Total Metals

CL70133-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Barium (23% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711796-01 through 1711796-10**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

(X) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	(X) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	( ) MassDEP EPH CAM IV B	(X) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for '"Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes (X) No ( )*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard

Date: December 13, 2017

Printed Name: Laurel Stoddard

Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.50)		6020A		20	NAR	12/04/17 11:44	2.08	100	CL70133
Arsenic	ND (2.49)		6010C		1	KJK	12/01/17 20:50	2.08	100	CL70133
Barium	ND (2.49)		6010C		1	KJK	12/01/17 20:50	2.08	100	CL70133
Beryllium	**0.38** (0.11)		6010C		1	KJK	12/01/17 20:50	2.08	100	CL70133
Cadmium	ND (0.50)		6010C		1	KJK	12/01/17 20:50	2.08	100	CL70133
Chromium	ND (1.00)		6010C		1	KJK	12/01/17 20:50	2.08	100	CL70133
Lead	**5.80** (4.98)		6010C		1	KJK	12/01/17 20:50	2.08	100	CL70133
Mercury	ND (0.022)		7471B		1	MJV	12/01/17 15:29	0.94	40	CK73030
Nickel	ND (2.49)		6010C		1	KJK	12/05/17 13:01	2.08	100	CL70133
Selenium	ND (0.50)		6020A		20	NAR	12/04/17 11:44	2.08	100	CL70133
Silver	ND (0.50)		6010C		1	KJK	12/01/17 20:50	2.08	100	CL70133
Thallium	ND (0.50)		6020A		20	NAR	12/04/17 11:44	2.08	100	CL70133
Vanadium	ND (1.00)		6010C		1	KJK	12/01/17 20:50	2.08	100	CL70133
Zinc	**7.66** (2.49)		6010C		1	KJK	12/01/17 20:50	2.08	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 4.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,1,1-Trichloroethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,1,2,2-Tetrachloroethane	ND (0.0022)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,1,2-Trichloroethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,1-Dichloroethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,1-Dichloroethene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,1-Dichloropropene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,2,3-Trichlorobenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,2,3-Trichloropropane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,2,4-Trichlorobenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,2,4-Trimethylbenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,2-Dibromo-3-Chloropropane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,2-Dibromoethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,2-Dichlorobenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,2-Dichloroethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,2-Dichloropropane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,3,5-Trimethylbenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,3-Dichlorobenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,3-Dichloropropane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,4-Dichlorobenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
1,4-Dioxane	ND (0.110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
2,2-Dichloropropane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
2-Butanone	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
2-Chlorotoluene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
2-Hexanone	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
4-Chlorotoluene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
4-Isopropyltoluene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
4-Methyl-2-Pentanone	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Acetone	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Benzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Bromobenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Bromochloromethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 4.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Bromoform	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Bromomethane	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Carbon Disulfide	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Carbon Tetrachloride	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Chlorobenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Chloroethane	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Chloroform	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Chloromethane	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
cis-1,2-Dichloroethene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
cis-1,3-Dichloropropene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Dibromochloromethane	ND (0.0022)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Dibromomethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Dichlorodifluoromethane	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Diethyl Ether	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Di-isopropyl ether	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Ethyl tertiary-butyl ether	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Ethylbenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Hexachlorobutadiene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Isopropylbenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Methyl tert-Butyl Ether	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Methylene Chloride	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Naphthalene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
n-Butylbenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
n-Propylbenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
sec-Butylbenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Styrene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
tert-Butylbenzene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Tertiary-amyl methyl ether	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Tetrachloroethene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Tetrahydrofuran	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Toluene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 4.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
trans-1,3-Dichloropropene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Trichloroethene	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Trichlorofluoromethane	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Vinyl Chloride	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Xylene O	ND (0.0055)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Xylene P,M	ND (0.0110)		8260B Low		1	12/01/17 18:36	C7L0012	CL70124
Xylenes (Total)	ND (0.0110)		8260B Low		1	12/01/17 18:36		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*107 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 20.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
4,4´-DDE	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
4,4´-DDT	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Aldrin	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
alpha-BHC	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
alpha-Chlordane	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
beta-BHC	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Chlordane (Total)	ND (0.0205)		8081B		1	12/04/17 19:53	C7L0023	CL70414
delta-BHC	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Dieldrin	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Endosulfan I	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Endosulfan II	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Endrin	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Endrin Ketone	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/04/17 19:53	C7L0023	CL70414
gamma-Chlordane	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Heptachlor	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Hexachlorobenzene	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414
Methoxychlor	ND (0.0026)		8081B		1	12/04/17 19:53	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*62 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*48 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*53 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 20.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/04/17 15:11		CL70107
Aroclor 1221	ND (0.05)		8082A		1	12/04/17 15:11		CL70107
Aroclor 1232	ND (0.05)		8082A		1	12/04/17 15:11		CL70107
Aroclor 1242	ND (0.05)		8082A		1	12/04/17 15:11		CL70107
Aroclor 1248	ND (0.05)		8082A		1	12/04/17 15:11		CL70107
Aroclor 1254	ND (0.05)		8082A		1	12/04/17 15:11		CL70107
Aroclor 1260	ND (0.05)		8082A		1	12/04/17 15:11		CL70107
Aroclor 1262	ND (0.05)		8082A		1	12/04/17 15:11		CL70107
Aroclor 1268	ND (0.05)		8082A		1	12/04/17 15:11		CL70107

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*79 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/06/17 18:32	C7L0076	CL70139
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/06/17 18:32	C7L0076	CL70139
2,4-D	ND (0.048)		8151A		1	12/06/17 18:32	C7L0076	CL70139
2,4-DB	ND (0.049)		8151A		1	12/06/17 18:32	C7L0076	CL70139
Dalapon	ND (0.047)		8151A		1	12/06/17 18:32	C7L0076	CL70139
Dicamba	ND (0.010)		8151A		1	12/06/17 18:32	C7L0076	CL70139
Dichlorprop	ND (0.048)		8151A		1	12/06/17 18:32	C7L0076	CL70139
Dinoseb	ND (0.049)		8151A		1	12/06/17 18:32	C7L0076	CL70139
MCPA	ND (2.38)		8151A		1	12/06/17 18:32	C7L0076	CL70139
MCPP	ND (2.41)		8151A		1	12/06/17 18:32	C7L0076	CL70139

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*65 %*		*30-150*
Surrogate: DCAA [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
1,2-Dichlorobenzene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
1,3-Dichlorobenzene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
1,4-Dichlorobenzene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2,4,5-Trichlorophenol	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2,4,6-Trichlorophenol	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2,4-Dichlorophenol	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2,4-Dimethylphenol	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2,4-Dinitrophenol	ND (1.75)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2,4-Dinitrotoluene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2,6-Dinitrotoluene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2-Chloronaphthalene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2-Chlorophenol	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2-Methylnaphthalene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2-Methylphenol	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
2-Nitrophenol	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
3,3′-Dichlorobenzidine	ND (0.700)		8270D		1	12/01/17 18:01	C7L0008	CL70110
3+4-Methylphenol	ND (0.700)		8270D		1	12/01/17 18:01	C7L0008	CL70110
4-Bromophenyl-phenylether	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
4-Chloroaniline	ND (0.700)		8270D		1	12/01/17 18:01	C7L0008	CL70110
4-Nitrophenol	ND (1.75)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Acenaphthene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Acenaphthylene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Acetophenone	ND (0.700)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Aniline	ND (1.75)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Anthracene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Azobenzene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Benzo(a)anthracene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Benzo(a)pyrene	ND (0.175)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Benzo(b)fluoranthene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Benzo(g,h,i)perylene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Benzo(k)fluoranthene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
bis(2-Chloroethyl)ether	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
bis(2-chloroisopropyl)Ether	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
bis(2-Ethylhexyl)phthalate	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Butylbenzylphthalate	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Chrysene	ND (0.175)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Dibenzo(a,h)Anthracene	ND (0.175)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Dibenzofuran	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Diethylphthalate	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Dimethylphthalate	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Di-n-butylphthalate	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Di-n-octylphthalate	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Fluoranthene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Fluorene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Hexachlorobenzene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Hexachlorobutadiene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Hexachloroethane	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Indeno(1,2,3-cd)Pyrene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Isophorone	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Naphthalene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Nitrobenzene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
N-Nitrosodimethylamine	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Pentachlorophenol	ND (1.75)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Phenanthrene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Phenol	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110
Pyrene	ND (0.350)		8270D		1	12/01/17 18:01	C7L0008	CL70110

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*66 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*74 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*71 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*71 %*		*30-130*				
Surrogate: Phenol-d6		*73 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*77 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**X* 386** (146)		9060		1	DEL	12/07/17 19:21	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.51)		6020A		20	NAR	12/04/17 12:01	2.05	100	CL70133
Arsenic	ND (2.54)		6010C		1	KJK	12/01/17 20:54	2.05	100	CL70133
Barium	ND (2.54)		6010C		1	KJK	12/01/17 20:54	2.05	100	CL70133
Beryllium	**0.37** (0.11)		6010C		1	KJK	12/01/17 20:54	2.05	100	CL70133
Cadmium	ND (0.51)		6010C		1	KJK	12/01/17 20:54	2.05	100	CL70133
Chromium	ND (1.01)		6010C		1	KJK	12/01/17 20:54	2.05	100	CL70133
Lead	**6.12** (5.07)		6010C		1	KJK	12/01/17 20:54	2.05	100	CL70133
Mercury	ND (0.018)		7471B		1	MJV	12/01/17 15:31	1.13	40	CK73030
Nickel	ND (2.54)		6010C		1	KJK	12/05/17 13:30	2.05	100	CL70133
Selenium	ND (0.51)		6020A		20	NAR	12/04/17 12:01	2.05	100	CL70133
Silver	ND (0.51)		6010C		1	KJK	12/01/17 20:54	2.05	100	CL70133
Thallium	ND (0.51)		6020A		20	NAR	12/04/17 12:01	2.05	100	CL70133
Vanadium	ND (1.01)		6010C		1	KJK	12/01/17 20:54	2.05	100	CL70133
Zinc	**8.41** (2.54)		6010C		1	KJK	12/01/17 20:54	2.05	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,1,2,2-Tetrachloroethane	ND (0.0019)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
1,4-Dioxane	ND (0.0945)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
2-Butanone	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
2-Chlorotoluene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
2-Hexanone	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
4-Chlorotoluene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
4-Methyl-2-Pentanone	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Acetone	**0.0119** (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Benzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Bromobenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Bromochloromethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Bromoform	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Bromomethane	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Carbon Disulfide	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Chlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Chloroethane	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Chloroform	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Chloromethane	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Dibromochloromethane	ND (0.0019)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Dibromomethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Dichlorodifluoromethane	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Diethyl Ether	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Di-isopropyl ether	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Ethylbenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Isopropylbenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Methylene Chloride	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Naphthalene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
n-Butylbenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
n-Propylbenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
sec-Butylbenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Styrene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
tert-Butylbenzene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Tetrachloroethene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Tetrahydrofuran	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Toluene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Trichloroethene	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Vinyl Chloride	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Xylene O	ND (0.0047)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Xylene P,M	ND (0.0094)		8260B Low		1	12/01/17 19:01	C7L0012	CL70124
Xylenes (Total)	ND (0.0094)		8260B Low		1	12/01/17 19:01		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*111 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*106 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 20.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
4,4´-DDE	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
4,4´-DDT	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Aldrin	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
alpha-BHC	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
alpha-Chlordane	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
beta-BHC	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Chlordane (Total)	ND (0.0199)		8081B		1	12/04/17 21:18	C7L0023	CL70414
delta-BHC	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Dieldrin	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Endosulfan I	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Endosulfan II	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Endrin	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Endrin Ketone	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/04/17 21:18	C7L0023	CL70414
gamma-Chlordane	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Heptachlor	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Hexachlorobenzene	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414
Methoxychlor	ND (0.0025)		8081B		1	12/04/17 21:18	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*67 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*44 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*49 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/04/17 15:30		CL70107
Aroclor 1221	ND (0.05)		8082A		1	12/04/17 15:30		CL70107
Aroclor 1232	ND (0.05)		8082A		1	12/04/17 15:30		CL70107
Aroclor 1242	ND (0.05)		8082A		1	12/04/17 15:30		CL70107
Aroclor 1248	ND (0.05)		8082A		1	12/04/17 15:30		CL70107
Aroclor 1254	ND (0.05)		8082A		1	12/04/17 15:30		CL70107
Aroclor 1260	ND (0.05)		8082A		1	12/04/17 15:30		CL70107
Aroclor 1262	ND (0.05)		8082A		1	12/04/17 15:30		CL70107
Aroclor 1268	ND (0.05)		8082A		1	12/04/17 15:30		CL70107

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*79 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*87 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/06/17 20:15	C7L0076	CL70139
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/06/17 20:15	C7L0076	CL70139
2,4-D	ND (0.048)		8151A		1	12/06/17 20:15	C7L0076	CL70139
2,4-DB	ND (0.049)		8151A		1	12/06/17 20:15	C7L0076	CL70139
Dalapon	ND (0.047)		8151A		1	12/06/17 20:15	C7L0076	CL70139
Dicamba	ND (0.010)		8151A		1	12/06/17 20:15	C7L0076	CL70139
Dichlorprop	ND (0.048)		8151A		1	12/06/17 20:15	C7L0076	CL70139
Dinoseb	ND (0.049)		8151A		1	12/06/17 20:15	C7L0076	CL70139
MCPA	ND (2.39)		8151A		1	12/06/17 20:15	C7L0076	CL70139
MCPP	ND (2.42)		8151A		1	12/06/17 20:15	C7L0076	CL70139

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*73 %*		*30-150*
Surrogate: DCAA [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
1,2-Dichlorobenzene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
1,3-Dichlorobenzene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
1,4-Dichlorobenzene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2,4,5-Trichlorophenol	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2,4,6-Trichlorophenol	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2,4-Dichlorophenol	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2,4-Dimethylphenol	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2,4-Dinitrophenol	ND (1.67)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2,4-Dinitrotoluene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2,6-Dinitrotoluene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2-Chloronaphthalene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2-Chlorophenol	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2-Methylnaphthalene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2-Methylphenol	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
2-Nitrophenol	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
3,3′-Dichlorobenzidine	ND (0.667)		8270D		1	12/01/17 18:35	C7L0008	CL70110
3+4-Methylphenol	ND (0.667)		8270D		1	12/01/17 18:35	C7L0008	CL70110
4-Bromophenyl-phenylether	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
4-Chloroaniline	ND (0.667)		8270D		1	12/01/17 18:35	C7L0008	CL70110
4-Nitrophenol	ND (1.67)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Acenaphthene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Acenaphthylene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Acetophenone	ND (0.667)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Aniline	ND (1.67)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Anthracene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Azobenzene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Benzo(a)anthracene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Benzo(a)pyrene	ND (0.167)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Benzo(b)fluoranthene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Benzo(g,h,i)perylene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Benzo(k)fluoranthene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
bis(2-Chloroethyl)ether	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
bis(2-chloroisopropyl)Ether	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
bis(2-Ethylhexyl)phthalate	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Butylbenzylphthalate	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Chrysene	ND (0.167)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Dibenzo(a,h)Anthracene	ND (0.167)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Dibenzofuran	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Diethylphthalate	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Dimethylphthalate	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Di-n-butylphthalate	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Di-n-octylphthalate	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Fluoranthene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Fluorene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Hexachlorobenzene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Hexachlorobutadiene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Hexachloroethane	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Indeno(1,2,3-cd)Pyrene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Isophorone	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Naphthalene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Nitrobenzene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
N-Nitrosodimethylamine	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Pentachlorophenol	ND (1.67)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Phenanthrene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Phenol	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110
Pyrene	ND (0.333)		8270D		1	12/01/17 18:35	C7L0008	CL70110

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*69 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*82 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*83 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*78 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*76 %*		*30-130*				
Surrogate: Phenol-d6		*82 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*83 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**965** (227)		9060		1	DEL	12/06/17 2:22	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.35)		6020A		20	NAR	12/04/17 12:07	2.95	100	CL70133
Arsenic	ND (1.76)		6010C		1	KJK	12/01/17 20:58	2.95	100	CL70133
Barium	ND (1.76)		6010C		1	KJK	12/01/17 20:58	2.95	100	CL70133
Beryllium	**0.33** (0.08)		6010C		1	KJK	12/01/17 20:58	2.95	100	CL70133
Cadmium	ND (0.35)		6010C		1	KJK	12/01/17 20:58	2.95	100	CL70133
Chromium	**0.72** (0.70)		6010C		1	KJK	12/01/17 20:58	2.95	100	CL70133
Lead	**4.20** (3.51)		6010C		1	KJK	12/01/17 20:58	2.95	100	CL70133
Mercury	ND (0.021)		7471B		1	MJV	12/01/17 15:33	1	40	CK73030
Nickel	ND (1.76)		6010C		1	KJK	12/05/17 13:34	2.95	100	CL70133
Selenium	ND (0.35)		6020A		20	NAR	12/04/17 12:07	2.95	100	CL70133
Silver	ND (0.35)		6010C		1	KJK	12/01/17 20:58	2.95	100	CL70133
Thallium	ND (0.35)		6020A		20	NAR	12/04/17 12:07	2.95	100	CL70133
Vanadium	ND (0.70)		6010C		1	KJK	12/01/17 20:58	2.95	100	CL70133
Zinc	**4.95** (1.76)		6010C		1	KJK	12/01/17 20:58	2.95	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,1,1-Trichloroethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,1,2,2-Tetrachloroethane	ND (0.0021)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,1,2-Trichloroethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,1-Dichloroethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,1-Dichloroethene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,1-Dichloropropene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,2,3-Trichlorobenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,2,3-Trichloropropane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,2,4-Trichlorobenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,2,4-Trimethylbenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,2-Dibromo-3-Chloropropane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,2-Dibromoethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,2-Dichlorobenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,2-Dichloroethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,2-Dichloropropane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,3,5-Trimethylbenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,3-Dichlorobenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,3-Dichloropropane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,4-Dichlorobenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
1,4-Dioxane	ND (0.104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
2,2-Dichloropropane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
2-Butanone	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
2-Chlorotoluene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
2-Hexanone	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
4-Chlorotoluene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
4-Isopropyltoluene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
4-Methyl-2-Pentanone	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Acetone	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Benzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Bromobenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Bromochloromethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Bromoform	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Bromomethane	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Carbon Disulfide	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Carbon Tetrachloride	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Chlorobenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Chloroethane	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Chloroform	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Chloromethane	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
cis-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
cis-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Dibromochloromethane	ND (0.0021)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Dibromomethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Dichlorodifluoromethane	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Diethyl Ether	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Di-isopropyl ether	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Ethyl tertiary-butyl ether	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Ethylbenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Hexachlorobutadiene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Isopropylbenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Methyl tert-Butyl Ether	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Methylene Chloride	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Naphthalene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
n-Butylbenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
n-Propylbenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
sec-Butylbenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Styrene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
tert-Butylbenzene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Tertiary-amyl methyl ether	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Tetrachloroethene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Tetrahydrofuran	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Toluene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
trans-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Trichloroethene	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Trichlorofluoromethane	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Vinyl Chloride	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Xylene O	ND (0.0052)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Xylene P,M	ND (0.0104)		8260B Low		1	12/01/17 19:26	C7L0012	CL70124
Xylenes (Total)	ND (0.0104)		8260B Low		1	12/01/17 19:26		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*111 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*106 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
4,4´-DDE	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
4,4´-DDT	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Aldrin	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
alpha-BHC	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
alpha-Chlordane	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
beta-BHC	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Chlordane (Total)	ND (0.0217)		8081B		1	12/04/17 21:47	C7L0023	CL70414
delta-BHC	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Dieldrin	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Endosulfan I	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Endosulfan II	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Endrin	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Endrin Ketone	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/04/17 21:47	C7L0023	CL70414
gamma-Chlordane	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Heptachlor	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Hexachlorobenzene	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414
Methoxychlor	ND (0.0027)		8081B		1	12/04/17 21:47	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*64 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*52 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/04/17 15:48		CL70107
Aroclor 1221	ND (0.05)		8082A		1	12/04/17 15:48		CL70107
Aroclor 1232	ND (0.05)		8082A		1	12/04/17 15:48		CL70107
Aroclor 1242	ND (0.05)		8082A		1	12/04/17 15:48		CL70107
Aroclor 1248	ND (0.05)		8082A		1	12/04/17 15:48		CL70107
Aroclor 1254	ND (0.05)		8082A		1	12/04/17 15:48		CL70107
Aroclor 1260	ND (0.05)		8082A		1	12/04/17 15:48		CL70107
Aroclor 1262	ND (0.05)		8082A		1	12/04/17 15:48		CL70107
Aroclor 1268	ND (0.05)		8082A		1	12/04/17 15:48		CL70107

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*80 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*89 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 10
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/06/17 20:50	C7L0076	CL70139
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/06/17 20:50	C7L0076	CL70139
2,4-D	ND (0.049)		8151A		1	12/06/17 20:50	C7L0076	CL70139
2,4-DB	ND (0.049)		8151A		1	12/06/17 20:50	C7L0076	CL70139
Dalapon	ND (0.047)		8151A		1	12/06/17 20:50	C7L0076	CL70139
Dicamba	ND (0.010)		8151A		1	12/06/17 20:50	C7L0076	CL70139
Dichlorprop	ND (0.049)		8151A		1	12/06/17 20:50	C7L0076	CL70139
Dinoseb	ND (0.049)		8151A		1	12/06/17 20:50	C7L0076	CL70139
MCPA	ND (2.41)		8151A		1	12/06/17 20:50	C7L0076	CL70139
MCPP	ND (2.43)		8151A		1	12/06/17 20:50	C7L0076	CL70139

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*75 %*		*30-150*
Surrogate: DCAA [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
1,2-Dichlorobenzene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
1,3-Dichlorobenzene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
1,4-Dichlorobenzene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2,4,5-Trichlorophenol	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2,4,6-Trichlorophenol	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2,4-Dichlorophenol	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2,4-Dimethylphenol	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2,4-Dinitrophenol	ND (1.64)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2,4-Dinitrotoluene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2,6-Dinitrotoluene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2-Chloronaphthalene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2-Chlorophenol	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2-Methylnaphthalene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2-Methylphenol	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
2-Nitrophenol	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
3,3′-Dichlorobenzidine	ND (0.656)		8270D		1	12/01/17 19:09	C7L0008	CL70110
3+4-Methylphenol	ND (0.656)		8270D		1	12/01/17 19:09	C7L0008	CL70110
4-Bromophenyl-phenylether	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
4-Chloroaniline	ND (0.656)		8270D		1	12/01/17 19:09	C7L0008	CL70110
4-Nitrophenol	ND (1.64)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Acenaphthene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Acenaphthylene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Acetophenone	ND (0.656)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Aniline	ND (1.64)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Anthracene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Azobenzene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Benzo(a)anthracene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Benzo(a)pyrene	ND (0.164)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Benzo(b)fluoranthene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Benzo(g,h,i)perylene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Benzo(k)fluoranthene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
bis(2-Chloroethyl)ether	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
bis(2-chloroisopropyl)Ether	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
bis(2-Ethylhexyl)phthalate	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Butylbenzylphthalate	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Chrysene	ND (0.164)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Dibenzo(a,h)Anthracene	ND (0.164)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Dibenzofuran	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Diethylphthalate	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Dimethylphthalate	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Di-n-butylphthalate	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Di-n-octylphthalate	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Fluoranthene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Fluorene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Hexachlorobenzene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Hexachlorobutadiene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Hexachloroethane	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Indeno(1,2,3-cd)Pyrene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Isophorone	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Naphthalene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Nitrobenzene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
N-Nitrosodimethylamine	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Pentachlorophenol	ND (1.64)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Phenanthrene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Phenol	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110
Pyrene	ND (0.328)		8270D		1	12/01/17 19:09	C7L0008	CL70110

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*75 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*66 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*79 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*74 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*75 %*		*30-130*				
Surrogate: Phenol-d6		*78 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*84 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**366** (189)		9060		1	DEL	12/07/17 20:11	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.45)		6020A		20	NAR	12/04/17 12:13	2.29	100	CL70133
Arsenic	ND (2.26)		6010C		1	KJK	12/01/17 21:15	2.29	100	CL70133
Barium	**2.96** (2.26)		6010C		1	KJK	12/01/17 21:15	2.29	100	CL70133
Beryllium	**0.36** (0.10)		6010C		1	KJK	12/01/17 21:15	2.29	100	CL70133
Cadmium	ND (0.45)		6010C		1	KJK	12/01/17 21:15	2.29	100	CL70133
Chromium	ND (0.90)		6010C		1	KJK	12/01/17 21:15	2.29	100	CL70133
Lead	**5.10** (4.52)		6010C		1	KJK	12/01/17 21:15	2.29	100	CL70133
Mercury	ND (0.026)		7471B		1	MJV	12/01/17 15:35	0.8	40	CK73030
Nickel	ND (2.26)		6010C		1	KJK	12/05/17 13:38	2.29	100	CL70133
Selenium	ND (0.45)		6020A		20	NAR	12/04/17 12:13	2.29	100	CL70133
Silver	ND (0.45)		6010C		1	KJK	12/01/17 21:15	2.29	100	CL70133
Thallium	ND (0.45)		6020A		20	NAR	12/04/17 12:13	2.29	100	CL70133
Vanadium	ND (0.90)		6010C		1	KJK	12/01/17 21:15	2.29	100	CL70133
Zinc	**6.36** (2.26)		6010C		1	KJK	12/01/17 21:15	2.29	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,1,1-Trichloroethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,1,2-Trichloroethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,1-Dichloroethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,1-Dichloroethene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,1-Dichloropropene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,2,3-Trichlorobenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,2,3-Trichloropropane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,2,4-Trichlorobenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,2,4-Trimethylbenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,2-Dibromo-3-Chloropropane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,2-Dibromoethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,2-Dichlorobenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,2-Dichloroethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,2-Dichloropropane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,3,5-Trimethylbenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,3-Dichlorobenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,3-Dichloropropane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,4-Dichlorobenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
1,4-Dioxane	ND (0.101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
2,2-Dichloropropane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
2-Butanone	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
2-Chlorotoluene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
2-Hexanone	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
4-Chlorotoluene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
4-Isopropyltoluene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
4-Methyl-2-Pentanone	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Acetone	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Benzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Bromobenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Bromochloromethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Bromoform	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Bromomethane	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Carbon Disulfide	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Carbon Tetrachloride	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Chlorobenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Chloroethane	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Chloroform	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Chloromethane	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
cis-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
cis-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Dibromochloromethane	ND (0.0020)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Dibromomethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Dichlorodifluoromethane	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Diethyl Ether	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Di-isopropyl ether	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Ethyl tertiary-butyl ether	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Ethylbenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Hexachlorobutadiene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Isopropylbenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Methyl tert-Butyl Ether	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Methylene Chloride	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Naphthalene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
n-Butylbenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
n-Propylbenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
sec-Butylbenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Styrene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
tert-Butylbenzene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Tertiary-amyl methyl ether	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Tetrachloroethene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Tetrahydrofuran	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Toluene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
trans-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Trichloroethene	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Trichlorofluoromethane	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Vinyl Chloride	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Xylene O	ND (0.0051)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Xylene P,M	ND (0.0101)		8260B Low		1	12/01/17 19:51	C7L0012	CL70124
Xylenes (Total)	ND (0.0101)		8260B Low		1	12/01/17 19:51		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*109 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*105 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
4,4´-DDE	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
4,4´-DDT	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Aldrin	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
alpha-BHC	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
alpha-Chlordane	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
beta-BHC	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Chlordane (Total)	ND (0.0207)		8081B		1	12/04/17 22:15	C7L0023	CL70414
delta-BHC	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Dieldrin	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Endosulfan I	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Endosulfan II	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Endrin	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Endrin Ketone	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/04/17 22:15	C7L0023	CL70414
gamma-Chlordane	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Heptachlor	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Hexachlorobenzene	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414
Methoxychlor	ND (0.0026)		8081B		1	12/04/17 22:15	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*55 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*58 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/04/17 16:07		CL70107
Aroclor 1221	ND (0.05)		8082A		1	12/04/17 16:07		CL70107
Aroclor 1232	ND (0.05)		8082A		1	12/04/17 16:07		CL70107
Aroclor 1242	ND (0.05)		8082A		1	12/04/17 16:07		CL70107
Aroclor 1248	ND (0.05)		8082A		1	12/04/17 16:07		CL70107
Aroclor 1254	ND (0.05)		8082A		1	12/04/17 16:07		CL70107
Aroclor 1260	ND (0.05)		8082A		1	12/04/17 16:07		CL70107
Aroclor 1262	ND (0.05)		8082A		1	12/04/17 16:07		CL70107
Aroclor 1268	ND (0.05)		8082A		1	12/04/17 16:07		CL70107

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*81 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 10.4
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.009)		8151A		1	12/06/17 21:24	C7L0076	CL70139
2,4,5-TP (Silvex)	ND (0.009)		8151A		1	12/06/17 21:24	C7L0076	CL70139
2,4-D	ND (0.047)		8151A		1	12/06/17 21:24	C7L0076	CL70139
2,4-DB	ND (0.047)		8151A		1	12/06/17 21:24	C7L0076	CL70139
Dalapon	ND (0.045)		8151A		1	12/06/17 21:24	C7L0076	CL70139
Dicamba	ND (0.009)		8151A		1	12/06/17 21:24	C7L0076	CL70139
Dichlorprop	ND (0.047)		8151A		1	12/06/17 21:24	C7L0076	CL70139
Dinoseb	ND (0.047)		8151A		1	12/06/17 21:24	C7L0076	CL70139
MCPA	ND (2.31)		8151A		1	12/06/17 21:24	C7L0076	CL70139
MCPP	ND (2.34)		8151A		1	12/06/17 21:24	C7L0076	CL70139

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*74 %*		*30-150*
Surrogate: DCAA [2C]	*87 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
1,2-Dichlorobenzene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
1,3-Dichlorobenzene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
1,4-Dichlorobenzene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2,4,5-Trichlorophenol	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2,4,6-Trichlorophenol	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2,4-Dichlorophenol	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2,4-Dimethylphenol	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2,4-Dinitrophenol	ND (1.85)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2,4-Dinitrotoluene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2,6-Dinitrotoluene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2-Chloronaphthalene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2-Chlorophenol	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2-Methylnaphthalene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2-Methylphenol	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
2-Nitrophenol	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
3,3′-Dichlorobenzidine	ND (0.739)		8270D		1	12/01/17 19:43	C7L0008	CL70110
3+4-Methylphenol	ND (0.739)		8270D		1	12/01/17 19:43	C7L0008	CL70110
4-Bromophenyl-phenylether	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
4-Chloroaniline	ND (0.739)		8270D		1	12/01/17 19:43	C7L0008	CL70110
4-Nitrophenol	ND (1.85)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Acenaphthene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Acenaphthylene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Acetophenone	ND (0.739)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Aniline	ND (1.85)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Anthracene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Azobenzene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Benzo(a)anthracene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Benzo(a)pyrene	ND (0.185)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Benzo(b)fluoranthene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Benzo(g,h,i)perylene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Benzo(k)fluoranthene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
bis(2-Chloroethyl)ether	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
bis(2-chloroisopropyl)Ether	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
bis(2-Ethylhexyl)phthalate	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Butylbenzylphthalate	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Chrysene	ND (0.185)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Dibenzo(a,h)Anthracene	ND (0.185)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Dibenzofuran	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Diethylphthalate	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Dimethylphthalate	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Di-n-butylphthalate	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Di-n-octylphthalate	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Fluoranthene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Fluorene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Hexachlorobenzene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Hexachlorobutadiene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Hexachloroethane	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Indeno(1,2,3-cd)Pyrene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Isophorone	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Naphthalene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Nitrobenzene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
N-Nitrosodimethylamine	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Pentachlorophenol	ND (1.85)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Phenanthrene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Phenol	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110
Pyrene	ND (0.369)		8270D		1	12/01/17 19:43	C7L0008	CL70110

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*69 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*78 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*84 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*73 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*73 %*		*30-130*				
Surrogate: Phenol-d6		*76 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*76 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**X* 316** (119)		9060		1	DEL	12/07/17 21:00	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.48)		6020A		20	NAR	12/04/17 12:19	2.15	100	CL70133
Arsenic	ND (2.42)		6010C		1	KJK	12/01/17 21:19	2.15	100	CL70133
Barium	**2.57** (2.42)		6010C		1	KJK	12/01/17 21:19	2.15	100	CL70133
Beryllium	**0.36** (0.11)		6010C		1	KJK	12/01/17 21:19	2.15	100	CL70133
Cadmium	ND (0.48)		6010C		1	KJK	12/01/17 21:19	2.15	100	CL70133
Chromium	ND (0.97)		6010C		1	KJK	12/01/17 21:19	2.15	100	CL70133
Lead	**6.81** (4.84)		6010C		1	KJK	12/01/17 21:19	2.15	100	CL70133
Mercury	ND (0.021)		7471B		1	MJV	12/01/17 15:37	0.97	40	CK73030
Nickel	ND (2.42)		6010C		1	KJK	12/05/17 13:42	2.15	100	CL70133
Selenium	ND (0.48)		6020A		20	NAR	12/04/17 12:19	2.15	100	CL70133
Silver	ND (0.48)		6010C		1	KJK	12/01/17 21:19	2.15	100	CL70133
Thallium	ND (0.48)		6020A		20	NAR	12/04/17 12:19	2.15	100	CL70133
Vanadium	ND (0.97)		6010C		1	KJK	12/01/17 21:19	2.15	100	CL70133
Zinc	**8.53** (2.42)		6010C		1	KJK	12/01/17 21:19	2.15	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 5.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,1,1-Trichloroethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,1,2,2-Tetrachloroethane	ND (0.0019)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,1,2-Trichloroethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,1-Dichloroethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,1-Dichloroethene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,1-Dichloropropene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,2,3-Trichlorobenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,2,3-Trichloropropane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,2,4-Trichlorobenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,2,4-Trimethylbenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,2-Dibromo-3-Chloropropane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,2-Dibromoethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,2-Dichlorobenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,2-Dichloroethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,2-Dichloropropane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,3,5-Trimethylbenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,3-Dichlorobenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,3-Dichloropropane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,4-Dichlorobenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
1,4-Dioxane	ND (0.0963)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
2,2-Dichloropropane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
2-Butanone	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
2-Chlorotoluene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
2-Hexanone	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
4-Chlorotoluene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
4-Isopropyltoluene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
4-Methyl-2-Pentanone	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Acetone	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Benzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Bromobenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Bromochloromethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 5.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Bromoform	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Bromomethane	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Carbon Disulfide	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Carbon Tetrachloride	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Chlorobenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Chloroethane	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Chloroform	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Chloromethane	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
cis-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
cis-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Dibromochloromethane	ND (0.0019)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Dibromomethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Dichlorodifluoromethane	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Diethyl Ether	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Di-isopropyl ether	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Ethyl tertiary-butyl ether	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Ethylbenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Hexachlorobutadiene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Isopropylbenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Methyl tert-Butyl Ether	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Methylene Chloride	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Naphthalene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
n-Butylbenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
n-Propylbenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
sec-Butylbenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Styrene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
tert-Butylbenzene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Tertiary-amyl methyl ether	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Tetrachloroethene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Tetrahydrofuran	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Toluene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 5.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
trans-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Trichloroethene	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Trichlorofluoromethane	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Vinyl Chloride	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Xylene O	ND (0.0048)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Xylene P,M	ND (0.0096)		8260B Low		1	12/01/17 20:16	C7L0012	CL70124
Xylenes (Total)	ND (0.0096)		8260B Low		1	12/01/17 20:16		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*110 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*94 %*		*70-130*
Surrogate: Dibromofluoromethane	*106 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
4,4´-DDE	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
4,4´-DDT	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Aldrin	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
alpha-BHC	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
alpha-Chlordane	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
beta-BHC	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Chlordane (Total)	ND (0.0211)		8081B		1	12/04/17 22:44	C7L0023	CL70414
delta-BHC	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Dieldrin	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Endosulfan I	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Endosulfan II	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Endrin	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Endrin Ketone	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/04/17 22:44	C7L0023	CL70414
gamma-Chlordane	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Heptachlor	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Hexachlorobenzene	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414
Methoxychlor	ND (0.0026)		8081B		1	12/04/17 22:44	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*71 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*49 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*56 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/04/17 16:25		CL70107
Aroclor 1221	ND (0.05)		8082A		1	12/04/17 16:25		CL70107
Aroclor 1232	ND (0.05)		8082A		1	12/04/17 16:25		CL70107
Aroclor 1242	ND (0.05)		8082A		1	12/04/17 16:25		CL70107
Aroclor 1248	ND (0.05)		8082A		1	12/04/17 16:25		CL70107
Aroclor 1254	ND (0.05)		8082A		1	12/04/17 16:25		CL70107
Aroclor 1260	ND (0.05)		8082A		1	12/04/17 16:25		CL70107
Aroclor 1262	ND (0.05)		8082A		1	12/04/17 16:25		CL70107
Aroclor 1268	ND (0.05)		8082A		1	12/04/17 16:25		CL70107

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*83 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 10.4
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.009)		8151A		1	12/06/17 21:59	C7L0076	CL70139
2,4,5-TP (Silvex)	ND (0.009)		8151A		1	12/06/17 21:59	C7L0076	CL70139
2,4-D	ND (0.047)		8151A		1	12/06/17 21:59	C7L0076	CL70139
2,4-DB	ND (0.047)		8151A		1	12/06/17 21:59	C7L0076	CL70139
Dalapon	ND (0.045)		8151A		1	12/06/17 21:59	C7L0076	CL70139
Dicamba	ND (0.009)		8151A		1	12/06/17 21:59	C7L0076	CL70139
Dichlorprop	ND (0.047)		8151A		1	12/06/17 21:59	C7L0076	CL70139
Dinoseb	ND (0.047)		8151A		1	12/06/17 21:59	C7L0076	CL70139
MCPA	ND (2.32)		8151A		1	12/06/17 21:59	C7L0076	CL70139
MCPP	ND (2.35)		8151A		1	12/06/17 21:59	C7L0076	CL70139

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*72 %*		*30-150*
Surrogate: DCAA [2C]	*86 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
1,2-Dichlorobenzene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
1,3-Dichlorobenzene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
1,4-Dichlorobenzene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2,4,5-Trichlorophenol	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2,4,6-Trichlorophenol	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2,4-Dichlorophenol	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2,4-Dimethylphenol	ND (0.094)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2,4-Dinitrophenol	ND (1.75)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2,4-Dinitrotoluene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2,6-Dinitrotoluene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2-Chloronaphthalene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2-Chlorophenol	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2-Methylnaphthalene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2-Methylphenol	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
2-Nitrophenol	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
3,3′-Dichlorobenzidine	ND (0.698)		8270D		1	12/01/17 20:18	C7L0008	CL70110
3+4-Methylphenol	ND (0.698)		8270D		1	12/01/17 20:18	C7L0008	CL70110
4-Bromophenyl-phenylether	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
4-Chloroaniline	ND (0.698)		8270D		1	12/01/17 20:18	C7L0008	CL70110
4-Nitrophenol	ND (1.75)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Acenaphthene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Acenaphthylene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Acetophenone	ND (0.698)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Aniline	ND (1.75)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Anthracene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Azobenzene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Benzo(a)anthracene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Benzo(a)pyrene	ND (0.175)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Benzo(b)fluoranthene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Benzo(g,h,i)perylene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Benzo(k)fluoranthene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
bis(2-Chloroethyl)ether	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
bis(2-chloroisopropyl)Ether	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
bis(2-Ethylhexyl)phthalate	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Butylbenzylphthalate	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Chrysene	ND (0.175)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Dibenzo(a,h)Anthracene	ND (0.175)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Dibenzofuran	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Diethylphthalate	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Dimethylphthalate	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Di-n-butylphthalate	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Di-n-octylphthalate	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Fluoranthene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Fluorene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Hexachlorobenzene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Hexachlorobutadiene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Hexachloroethane	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Indeno(1,2,3-cd)Pyrene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Isophorone	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Naphthalene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Nitrobenzene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
N-Nitrosodimethylamine	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Pentachlorophenol	ND (1.75)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Phenanthrene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Phenol	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110
Pyrene	ND (0.349)		8270D		1	12/01/17 20:18	C7L0008	CL70110

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*62 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*76 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*77 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*71 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*72 %*		*30-130*				
Surrogate: Phenol-d6		*74 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*86 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**X* 1040** (129)		9060		1	DEL	12/07/17 21:17	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.57)		6020A		20	NAR	12/04/17 12:25	2.18	100	CL70133
Arsenic	**16.6** (2.83)		6010C		1	KJK	12/01/17 21:23	2.18	100	CL70133
Barium	**22.3** (2.83)		6010C		1	KJK	12/01/17 21:23	2.18	100	CL70133
Beryllium	**0.39** (0.12)		6010C		1	KJK	12/01/17 21:23	2.18	100	CL70133
Cadmium	ND (0.57)		6010C		1	KJK	12/01/17 21:23	2.18	100	CL70133
Chromium	**61.4** (1.13)		6010C		1	KJK	12/01/17 21:23	2.18	100	CL70133
Lead	**26.4** (5.65)		6010C		1	KJK	12/01/17 21:23	2.18	100	CL70133
Mercury	ND (0.031)		7471B		1	MJV	12/01/17 15:39	0.78	40	CK73030
Nickel	**23.2** (2.83)		6010C		1	KJK	12/05/17 13:46	2.18	100	CL70133
Selenium	ND (0.57)		6020A		20	NAR	12/04/17 12:25	2.18	100	CL70133
Silver	ND (0.57)		6010C		1	KJK	12/01/17 21:23	2.18	100	CL70133
Thallium	ND (0.57)		6020A		20	NAR	12/04/17 12:25	2.18	100	CL70133
Vanadium	**16.5** (1.13)		6010C		1	KJK	12/01/17 21:23	2.18	100	CL70133
Zinc	**31.8** (2.83)		6010C		1	KJK	12/01/17 21:23	2.18	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,1,2,2-Tetrachloroethane	ND (0.0019)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
1,4-Dioxane	ND (0.0934)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
2-Butanone	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
2-Chlorotoluene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
2-Hexanone	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
4-Chlorotoluene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
4-Methyl-2-Pentanone	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Acetone	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Benzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Bromobenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Bromochloromethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Bromoform	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Bromomethane	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Carbon Disulfide	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Chlorobenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Chloroethane	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Chloroform	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Chloromethane	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Dibromochloromethane	ND (0.0019)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Dibromomethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Dichlorodifluoromethane	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Diethyl Ether	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Di-isopropyl ether	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Ethylbenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Isopropylbenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Methylene Chloride	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Naphthalene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
n-Butylbenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
n-Propylbenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
sec-Butylbenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Styrene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
tert-Butylbenzene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Tetrachloroethene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Tetrahydrofuran	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Toluene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Trichloroethene	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Vinyl Chloride	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Xylene O	ND (0.0047)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Xylene P,M	ND (0.0093)		8260B Low		1	12/01/17 20:42	C7L0012	CL70124
Xylenes (Total)	ND (0.0093)		8260B Low		1	12/01/17 20:42		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*109 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*94 %*		*70-130*
Surrogate: Dibromofluoromethane	*106 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
4,4´-DDE	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
4,4´-DDT	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Aldrin	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
alpha-BHC	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
alpha-Chlordane	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
beta-BHC	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Chlordane (Total)	ND (0.0257)		8081B		1	12/04/17 23:12	C7L0023	CL70414
delta-BHC	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Dieldrin	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Endosulfan I	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Endosulfan II	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Endrin	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Endrin Ketone	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0019)		8081B		1	12/04/17 23:12	C7L0023	CL70414
gamma-Chlordane	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Heptachlor	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Hexachlorobenzene	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414
Methoxychlor	ND (0.0032)		8081B		1	12/04/17 23:12	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*76 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*92 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/04/17 19:13		CL70107
Aroclor 1221	ND (0.06)		8082A		1	12/04/17 19:13		CL70107
Aroclor 1232	ND (0.06)		8082A		1	12/04/17 19:13		CL70107
Aroclor 1242	ND (0.06)		8082A		1	12/04/17 19:13		CL70107
Aroclor 1248	ND (0.06)		8082A		1	12/04/17 19:13		CL70107
Aroclor 1254	ND (0.06)		8082A		1	12/04/17 19:13		CL70107
Aroclor 1260	ND (0.06)		8082A		1	12/04/17 19:13		CL70107
Aroclor 1262	ND (0.06)		8082A		1	12/04/17 19:13		CL70107
Aroclor 1268	ND (0.06)		8082A		1	12/04/17 19:13		CL70107

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*86 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 10.7
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.011)		8151A		1	12/06/17 22:33	C7L0076	CL70139
2,4,5-TP (Silvex)	ND (0.011)		8151A		1	12/06/17 22:33	C7L0076	CL70139
2,4-D	ND (0.054)		8151A		1	12/06/17 22:33	C7L0076	CL70139
2,4-DB	ND (0.055)		8151A		1	12/06/17 22:33	C7L0076	CL70139
Dalapon	ND (0.052)		8151A		1	12/06/17 22:33	C7L0076	CL70139
Dicamba	ND (0.011)		8151A		1	12/06/17 22:33	C7L0076	CL70139
Dichlorprop	ND (0.054)		8151A		1	12/06/17 22:33	C7L0076	CL70139
Dinoseb	ND (0.055)		8151A		1	12/06/17 22:33	C7L0076	CL70139
MCPA	ND (2.68)		8151A		1	12/06/17 22:33	C7L0076	CL70139
MCPP [2C]	ND (2.71)		8151A		1	12/06/17 22:33	C7L0076	CL70139

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*57 %*		*30-150*
Surrogate: DCAA [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
1,2-Dichlorobenzene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
1,3-Dichlorobenzene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
1,4-Dichlorobenzene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2,4,5-Trichlorophenol	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2,4,6-Trichlorophenol	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2,4-Dichlorophenol	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2,4-Dimethylphenol	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2,4-Dinitrophenol	ND (2.19)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2,4-Dinitrotoluene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2,6-Dinitrotoluene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2-Chloronaphthalene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2-Chlorophenol	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2-Methylnaphthalene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2-Methylphenol	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
2-Nitrophenol	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
3,3′-Dichlorobenzidine	ND (0.874)		8270D		1	12/05/17 20:47	C7L0051	CL70412
3+4-Methylphenol	ND (0.874)		8270D		1	12/05/17 20:47	C7L0051	CL70412
4-Bromophenyl-phenylether	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
4-Chloroaniline	ND (0.874)		8270D		1	12/05/17 20:47	C7L0051	CL70412
4-Nitrophenol	ND (2.19)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Acenaphthene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Acenaphthylene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Acetophenone	ND (0.874)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Aniline	ND (2.19)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Anthracene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Azobenzene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Benzo(a)anthracene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Benzo(a)pyrene	ND (0.219)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Benzo(b)fluoranthene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Benzo(g,h,i)perylene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Benzo(k)fluoranthene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
bis(2-Chloroethyl)ether	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
bis(2-chloroisopropyl)Ether	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
bis(2-Ethylhexyl)phthalate	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Butylbenzylphthalate	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Chrysene	ND (0.219)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Dibenzo(a,h)Anthracene	ND (0.219)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Dibenzofuran	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Diethylphthalate	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Dimethylphthalate	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Di-n-butylphthalate	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Di-n-octylphthalate	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Fluoranthene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Fluorene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Hexachlorobenzene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Hexachlorobutadiene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Hexachloroethane	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Indeno(1,2,3-cd)Pyrene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Isophorone	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Naphthalene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Nitrobenzene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
N-Nitrosodimethylamine	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Pentachlorophenol	ND (2.19)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Phenanthrene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Phenol	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412
Pyrene	ND (0.437)		8270D		1	12/05/17 20:47	C7L0051	CL70412

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*94 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*82 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*86 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*84 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*92 %*		*30-130*				
Surrogate: Phenol-d6		*83 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*84 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**195** (159)		9060		1	DEL	12/07/17 21:34	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.49)		6020A		20	NAR	12/04/17 12:30	2.36	100	CL70133
Arsenic	**15.7** (2.45)		6010C		1	KJK	12/01/17 21:27	2.36	100	CL70133
Barium	**16.1** (2.45)		6010C		1	KJK	12/01/17 21:27	2.36	100	CL70133
Beryllium	**0.38** (0.11)		6010C		1	KJK	12/01/17 21:27	2.36	100	CL70133
Cadmium	ND (0.49)		6010C		1	KJK	12/01/17 21:27	2.36	100	CL70133
Chromium	**41.1** (0.98)		6010C		1	KJK	12/01/17 21:27	2.36	100	CL70133
Lead	**26.0** (4.90)		6010C		1	KJK	12/01/17 21:27	2.36	100	CL70133
Mercury	ND (0.025)		7471B		1	MJV	12/01/17 15:41	0.92	40	CK73030
Nickel	**18.3** (2.45)		6010C		1	KJK	12/05/17 13:50	2.36	100	CL70133
Selenium	ND (0.49)		6020A		20	NAR	12/04/17 12:30	2.36	100	CL70133
Silver	ND (0.49)		6010C		1	KJK	12/01/17 21:27	2.36	100	CL70133
Thallium	ND (0.49)		6020A		20	NAR	12/04/17 12:30	2.36	100	CL70133
Vanadium	**12.4** (0.98)		6010C		1	KJK	12/01/17 21:27	2.36	100	CL70133
Zinc	**24.2** (2.45)		6010C		1	KJK	12/01/17 21:27	2.36	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,1,1-Trichloroethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,1,2-Trichloroethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,1-Dichloroethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,1-Dichloroethene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,1-Dichloropropene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,2,3-Trichlorobenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,2,3-Trichloropropane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,2,4-Trichlorobenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,2,4-Trimethylbenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,2-Dibromo-3-Chloropropane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,2-Dibromoethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,2-Dichlorobenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,2-Dichloroethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,2-Dichloropropane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,3,5-Trimethylbenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,3-Dichlorobenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,3-Dichloropropane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,4-Dichlorobenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
1,4-Dioxane	ND (0.0918)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
2,2-Dichloropropane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
2-Butanone	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
2-Chlorotoluene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
2-Hexanone	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
4-Chlorotoluene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
4-Isopropyltoluene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
4-Methyl-2-Pentanone	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Acetone	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Benzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Bromobenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Bromochloromethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Bromoform	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Bromomethane	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Carbon Disulfide	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Carbon Tetrachloride	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Chlorobenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Chloroethane	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Chloroform	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Chloromethane	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
cis-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
cis-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Dibromomethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Dichlorodifluoromethane	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Diethyl Ether	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Di-isopropyl ether	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Ethyl tertiary-butyl ether	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Ethylbenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Hexachlorobutadiene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Isopropylbenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Methyl tert-Butyl Ether	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Methylene Chloride	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Naphthalene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
n-Butylbenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
n-Propylbenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
sec-Butylbenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Styrene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
tert-Butylbenzene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Tertiary-amyl methyl ether	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Tetrachloroethene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Tetrahydrofuran	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Toluene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
trans-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Trichloroethene	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Trichlorofluoromethane	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Vinyl Chloride	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Xylene O	ND (0.0046)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Xylene P,M	ND (0.0092)		8260B Low		1	12/01/17 21:07	C7L0012	CL70124
Xylenes (Total)	ND (0.0092)		8260B Low		1	12/01/17 21:07		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*110 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*107 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
4,4´-DDE	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
4,4´-DDT	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Aldrin	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
alpha-BHC	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
alpha-Chlordane	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
beta-BHC	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Chlordane (Total)	ND (0.0242)		8081B		1	12/04/17 23:41	C7L0023	CL70414
delta-BHC	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Dieldrin	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Endosulfan I	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Endosulfan II	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Endrin	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Endrin Ketone	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	12/04/17 23:41	C7L0023	CL70414
gamma-Chlordane	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Heptachlor	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Hexachlorobenzene	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414
Methoxychlor	ND (0.0030)		8081B		1	12/04/17 23:41	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*56 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*49 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*57 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/04/17 19:32		CL70107
Aroclor 1221	ND (0.06)		8082A		1	12/04/17 19:32		CL70107
Aroclor 1232	ND (0.06)		8082A		1	12/04/17 19:32		CL70107
Aroclor 1242	ND (0.06)		8082A		1	12/04/17 19:32		CL70107
Aroclor 1248	ND (0.06)		8082A		1	12/04/17 19:32		CL70107
Aroclor 1254	ND (0.06)		8082A		1	12/04/17 19:32		CL70107
Aroclor 1260	ND (0.06)		8082A		1	12/04/17 19:32		CL70107
Aroclor 1262	ND (0.06)		8082A		1	12/04/17 19:32		CL70107
Aroclor 1268	ND (0.06)		8082A		1	12/04/17 19:32		CL70107

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*88 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.011)		8151A		1	12/06/17 23:08	C7L0076	CL70139
2,4,5-TP (Silvex)	ND (0.011)		8151A		1	12/06/17 23:08	C7L0076	CL70139
2,4-D	ND (0.053)		8151A		1	12/06/17 23:08	C7L0076	CL70139
2,4-DB	ND (0.053)		8151A		1	12/06/17 23:08	C7L0076	CL70139
Dalapon	ND (0.051)		8151A		1	12/06/17 23:08	C7L0076	CL70139
Dicamba	ND (0.011)		8151A		1	12/06/17 23:08	C7L0076	CL70139
Dichlorprop	ND (0.053)		8151A		1	12/06/17 23:08	C7L0076	CL70139
Dinoseb	ND (0.053)		8151A		1	12/06/17 23:08	C7L0076	CL70139
MCPA	ND (2.61)		8151A		1	12/06/17 23:08	C7L0076	CL70139
MCPP	# ND (2.64)		8151A		1	12/06/17 23:08	C7L0076	CL70139

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*63 %*		*30-150*
Surrogate: DCAA [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
1,2-Dichlorobenzene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
1,3-Dichlorobenzene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
1,4-Dichlorobenzene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2,4,5-Trichlorophenol	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2,4,6-Trichlorophenol	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2,4-Dichlorophenol	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2,4-Dimethylphenol	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2,4-Dinitrophenol	ND (2.01)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2,4-Dinitrotoluene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2,6-Dinitrotoluene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2-Chloronaphthalene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2-Chlorophenol	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2-Methylnaphthalene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2-Methylphenol	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
2-Nitrophenol	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
3,3′-Dichlorobenzidine	ND (0.804)		8270D		1	12/05/17 22:32	C7L0051	CL70412
3+4-Methylphenol	ND (0.804)		8270D		1	12/05/17 22:32	C7L0051	CL70412
4-Bromophenyl-phenylether	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
4-Chloroaniline	ND (0.804)		8270D		1	12/05/17 22:32	C7L0051	CL70412
4-Nitrophenol	ND (2.01)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Acenaphthene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Acenaphthylene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Acetophenone	ND (0.804)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Aniline	ND (2.01)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Anthracene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Azobenzene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Benzo(a)anthracene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Benzo(a)pyrene	ND (0.201)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Benzo(b)fluoranthene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Benzo(g,h,i)perylene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Benzo(k)fluoranthene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
bis(2-Chloroethyl)ether	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
bis(2-chloroisopropyl)Ether	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
bis(2-Ethylhexyl)phthalate	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Butylbenzylphthalate	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Chrysene	ND (0.201)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Dibenzo(a,h)Anthracene	ND (0.201)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Dibenzofuran	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Diethylphthalate	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Dimethylphthalate	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Di-n-butylphthalate	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Di-n-octylphthalate	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Fluoranthene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Fluorene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Hexachlorobenzene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Hexachlorobutadiene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Hexachloroethane	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Indeno(1,2,3-cd)Pyrene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Isophorone	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Naphthalene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Nitrobenzene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
N-Nitrosodimethylamine	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Pentachlorophenol	ND (2.01)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Phenanthrene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Phenol	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412
Pyrene	ND (0.401)		8270D		1	12/05/17 22:32	C7L0051	CL70412

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*81 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*95 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*84 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*87 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*86 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*89 %*		*30-130*				
Surrogate: Phenol-d6		*86 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*87 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (236)		9060		1	DEL	12/07/17 21:52	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.46)		6020A		20	NAR	12/04/17 15:14	2.52	100	CL70133
Arsenic	**14.7** (2.31)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133
Barium	**19.1** (2.31)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133
Beryllium	**0.42** (0.10)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133
Cadmium	ND (0.46)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133
Chromium	**46.5** (0.92)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133
Lead	**26.7** (4.61)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133
Mercury	ND (0.028)		7471B		1	BJV	12/05/17 13:42	0.81	40	CL70134
Nickel	**18.5** (2.31)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133
Selenium	ND (0.46)		6020A		20	NAR	12/04/17 15:14	2.52	100	CL70133
Silver	ND (0.46)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133
Thallium	ND (0.46)		6020A		20	NAR	12/04/17 15:14	2.52	100	CL70133
Vanadium	**13.2** (0.92)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133
Zinc	**26.2** (2.31)		6010C		1	KJK	12/05/17 10:17	2.52	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
1,4-Dioxane	ND (0.0880)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
2-Butanone	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
2-Chlorotoluene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
2-Hexanone	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
4-Chlorotoluene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
4-Methyl-2-Pentanone	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Acetone	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Benzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Bromobenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Bromochloromethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Bromoform	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Bromomethane	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Carbon Disulfide	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Chlorobenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Chloroethane	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Chloroform	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Chloromethane	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Dibromomethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Dichlorodifluoromethane	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Diethyl Ether	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Di-isopropyl ether	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Ethylbenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Isopropylbenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Methylene Chloride	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Naphthalene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
n-Butylbenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
n-Propylbenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
sec-Butylbenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Styrene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
tert-Butylbenzene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Tetrachloroethene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Tetrahydrofuran	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Toluene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Trichloroethene	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Vinyl Chloride	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Xylene O	ND (0.0044)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Xylene P,M	ND (0.0088)		8260B Low		1	12/04/17 19:00	C7L0040	CL70426
Xylenes (Total)	ND (0.0088)		8260B Low		1	12/04/17 19:00		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*104 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
4,4´-DDE	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
4,4´-DDT	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Aldrin	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
alpha-BHC	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
alpha-Chlordane	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
beta-BHC	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Chlordane (Total)	ND (0.0242)		8081B		1	12/05/17 0:09	C7L0023	CL70414
delta-BHC	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Dieldrin	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Endosulfan I	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Endosulfan II	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Endrin	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Endrin Ketone	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	12/05/17 0:09	C7L0023	CL70414
gamma-Chlordane	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Heptachlor	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Hexachlorobenzene	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414
Methoxychlor	ND (0.0030)		8081B		1	12/05/17 0:09	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*72 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*60 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*65 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/4/17 16:10

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/05/17 13:59		CL70409
Aroclor 1221	ND (0.06)		8082A		1	12/05/17 13:59		CL70409
Aroclor 1232	ND (0.06)		8082A		1	12/05/17 13:59		CL70409
Aroclor 1242	ND (0.06)		8082A		1	12/05/17 13:59		CL70409
Aroclor 1248	ND (0.06)		8082A		1	12/05/17 13:59		CL70409
Aroclor 1254	ND (0.06)		8082A		1	12/05/17 13:59		CL70409
Aroclor 1260	ND (0.06)		8082A		1	12/05/17 13:59		CL70409
Aroclor 1262	ND (0.06)		8082A		1	12/05/17 13:59		CL70409
Aroclor 1268	ND (0.06)		8082A		1	12/05/17 13:59		CL70409

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*77 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*102 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/5/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.011)		8151A		1	12/07/17 15:38	C7L0076	CL70530
2,4,5-TP (Silvex)	ND (0.011)		8151A		1	12/07/17 15:38	C7L0076	CL70530
2,4-D	ND (0.054)		8151A		1	12/07/17 15:38	C7L0076	CL70530
2,4-DB	ND (0.054)		8151A		1	12/07/17 15:38	C7L0076	CL70530
Dalapon	ND (0.052)		8151A		1	12/07/17 15:38	C7L0076	CL70530
Dicamba	ND (0.011)		8151A		1	12/07/17 15:38	C7L0076	CL70530
Dichlorprop	ND (0.054)		8151A		1	12/07/17 15:38	C7L0076	CL70530
Dinoseb	ND (0.054)		8151A		1	12/07/17 15:38	C7L0076	CL70530
MCPA	ND (2.65)		8151A		1	12/07/17 15:38	C7L0076	CL70530
MCPP	ND (2.68)		8151A		1	12/07/17 15:38	C7L0076	CL70530

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*41 %*		*30-150*
Surrogate: DCAA [2C]	*37 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
1,2-Dichlorobenzene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
1,3-Dichlorobenzene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
1,4-Dichlorobenzene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2,4,5-Trichlorophenol	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2,4,6-Trichlorophenol	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2,4-Dichlorophenol	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2,4-Dimethylphenol	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2,4-Dinitrophenol	ND (1.97)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2,4-Dinitrotoluene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2,6-Dinitrotoluene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2-Chloronaphthalene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2-Chlorophenol	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2-Methylnaphthalene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2-Methylphenol	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
2-Nitrophenol	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
3,3′-Dichlorobenzidine	ND (0.785)		8270D		1	12/05/17 23:07	C7L0051	CL70412
3+4-Methylphenol	ND (0.785)		8270D		1	12/05/17 23:07	C7L0051	CL70412
4-Bromophenyl-phenylether	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
4-Chloroaniline	ND (0.785)		8270D		1	12/05/17 23:07	C7L0051	CL70412
4-Nitrophenol	ND (1.97)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Acenaphthene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Acenaphthylene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Acetophenone	ND (0.785)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Aniline	ND (1.97)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Anthracene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Azobenzene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Benzo(a)anthracene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Benzo(a)pyrene	ND (0.197)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Benzo(b)fluoranthene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Benzo(g,h,i)perylene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Benzo(k)fluoranthene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
bis(2-Chloroethyl)ether	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
bis(2-chloroisopropyl)Ether	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
bis(2-Ethylhexyl)phthalate	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Butylbenzylphthalate	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Chrysene	ND (0.197)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Dibenzo(a,h)Anthracene	ND (0.197)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Dibenzofuran	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Diethylphthalate	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Dimethylphthalate	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Di-n-butylphthalate	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Di-n-octylphthalate	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Fluoranthene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Fluorene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Hexachlorobenzene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Hexachlorobutadiene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Hexachloroethane	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Indeno(1,2,3-cd)Pyrene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Isophorone	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Naphthalene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Nitrobenzene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
N-Nitrosodimethylamine	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Pentachlorophenol	ND (1.97)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Phenanthrene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Phenol	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412
Pyrene	ND (0.392)		8270D		1	12/05/17 23:07	C7L0051	CL70412

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*66 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*80 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*71 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*74 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*82 %*		*30-130*				
Surrogate: Phenol-d6		*71 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*71 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**385** (213)		9060		1	DEL	12/06/17 3:34	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.55)		6020A		20	NAR	12/04/17 15:20	2.1	100	CL70133
Arsenic	**17.1** (2.77)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133
Barium	**21.3** (2.77)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133
Beryllium	**0.46** (0.12)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133
Cadmium	ND (0.55)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133
Chromium	**50.2** (1.11)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133
Lead	**31.4** (5.54)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133
Mercury	ND (0.026)		7471B		1	BJV	12/05/17 13:44	0.87	40	CL70134
Nickel	**20.7** (2.77)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133
Selenium	ND (0.55)		6020A		20	NAR	12/04/17 15:20	2.1	100	CL70133
Silver	ND (0.55)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133
Thallium	ND (0.55)		6020A		20	NAR	12/04/17 15:20	2.1	100	CL70133
Vanadium	**13.9** (1.11)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133
Zinc	**28.4** (2.77)		6010C		1	KJK	12/05/17 10:21	2.1	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
1,4-Dioxane	ND (0.0868)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
2-Butanone	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
2-Chlorotoluene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
2-Hexanone	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
4-Chlorotoluene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
4-Methyl-2-Pentanone	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Acetone	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Benzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Bromobenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Bromochloromethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Bromoform	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Bromomethane	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Carbon Disulfide	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Chlorobenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Chloroethane	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Chloroform	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Chloromethane	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Dibromomethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Diethyl Ether	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Di-isopropyl ether	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Ethylbenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Isopropylbenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Methylene Chloride	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Naphthalene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
n-Butylbenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
n-Propylbenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
sec-Butylbenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Styrene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
tert-Butylbenzene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Tetrachloroethene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Tetrahydrofuran	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Toluene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Trichloroethene	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Vinyl Chloride	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Xylene O	ND (0.0043)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Xylene P,M	ND (0.0087)		8260B Low		1	12/04/17 19:26	C7L0040	CL70426
Xylenes (Total)	ND (0.0087)		8260B Low		1	12/04/17 19:26		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*105 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*102 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
4,4´-DDE	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
4,4´-DDT	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Aldrin	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
alpha-BHC	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
alpha-Chlordane	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
beta-BHC	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Chlordane (Total)	ND (0.0232)		8081B		1	12/05/17 0:38	C7L0023	CL70414
delta-BHC	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Dieldrin	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Endosulfan I	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Endosulfan II	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Endrin	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Endrin Ketone	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/05/17 0:38	C7L0023	CL70414
gamma-Chlordane	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Heptachlor	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Hexachlorobenzene	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414
Methoxychlor	ND (0.0029)		8081B		1	12/05/17 0:38	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*70 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*52 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*61 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 20.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/4/17 16:10

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/05/17 14:18		CL70409
Aroclor 1221	ND (0.06)		8082A		1	12/05/17 14:18		CL70409
Aroclor 1232	ND (0.06)		8082A		1	12/05/17 14:18		CL70409
Aroclor 1242	ND (0.06)		8082A		1	12/05/17 14:18		CL70409
Aroclor 1248	ND (0.06)		8082A		1	12/05/17 14:18		CL70409
Aroclor 1254	ND (0.06)		8082A		1	12/05/17 14:18		CL70409
Aroclor 1260	ND (0.06)		8082A		1	12/05/17 14:18		CL70409
Aroclor 1262	ND (0.06)		8082A		1	12/05/17 14:18		CL70409
Aroclor 1268	ND (0.06)		8082A		1	12/05/17 14:18		CL70409

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*83 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*96 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*92 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/5/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.011)		8151A		1	12/07/17 16:14	C7L0076	CL70530
2,4,5-TP (Silvex)	ND (0.011)		8151A		1	12/07/17 16:14	C7L0076	CL70530
2,4-D	ND (0.053)		8151A		1	12/07/17 16:14	C7L0076	CL70530
2,4-DB	ND (0.054)		8151A		1	12/07/17 16:14	C7L0076	CL70530
Dalapon	ND (0.051)		8151A		1	12/07/17 16:14	C7L0076	CL70530
Dicamba	ND (0.011)		8151A		1	12/07/17 16:14	C7L0076	CL70530
Dichlorprop	ND (0.053)		8151A		1	12/07/17 16:14	C7L0076	CL70530
Dinoseb	ND (0.054)		8151A		1	12/07/17 16:14	C7L0076	CL70530
MCPA	ND (2.62)		8151A		1	12/07/17 16:14	C7L0076	CL70530
MCPP	ND (2.65)		8151A		1	12/07/17 16:14	C7L0076	CL70530

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*32 %*		*30-150*
Surrogate: DCAA [2C]	*27 %*	*S-*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
1,2-Dichlorobenzene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
1,3-Dichlorobenzene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
1,4-Dichlorobenzene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2,4,5-Trichlorophenol	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2,4,6-Trichlorophenol	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2,4-Dichlorophenol	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2,4-Dimethylphenol	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2,4-Dinitrophenol	ND (1.93)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2,4-Dinitrotoluene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2,6-Dinitrotoluene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2-Chloronaphthalene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2-Chlorophenol	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2-Methylnaphthalene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2-Methylphenol	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
2-Nitrophenol	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
3,3′-Dichlorobenzidine	ND (0.770)		8270D		1	12/05/17 23:41	C7L0051	CL70412
3+4-Methylphenol	ND (0.770)		8270D		1	12/05/17 23:41	C7L0051	CL70412
4-Bromophenyl-phenylether	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
4-Chloroaniline	ND (0.770)		8270D		1	12/05/17 23:41	C7L0051	CL70412
4-Nitrophenol	ND (1.93)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Acenaphthene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Acenaphthylene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Acetophenone	ND (0.770)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Aniline	ND (1.93)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Anthracene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Azobenzene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Benzo(a)anthracene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Benzo(a)pyrene	ND (0.193)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Benzo(b)fluoranthene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Benzo(g,h,i)perylene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Benzo(k)fluoranthene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
bis(2-Chloroethyl)ether	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
bis(2-chloroisopropyl)Ether	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
bis(2-Ethylhexyl)phthalate	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Butylbenzylphthalate	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Chrysene	ND (0.193)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Dibenzo(a,h)Anthracene	ND (0.193)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Dibenzofuran	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Diethylphthalate	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Dimethylphthalate	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Di-n-butylphthalate	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Di-n-octylphthalate	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Fluoranthene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Fluorene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Hexachlorobenzene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Hexachlorobutadiene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Hexachloroethane	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Indeno(1,2,3-cd)Pyrene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Isophorone	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Naphthalene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Nitrobenzene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
N-Nitrosodimethylamine	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Pentachlorophenol	ND (1.93)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Phenanthrene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Phenol	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412
Pyrene	ND (0.385)		8270D		1	12/05/17 23:41	C7L0051	CL70412

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*69 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*80 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*75 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*77 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*77 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*81 %*		*30-130*				
Surrogate: Phenol-d6		*76 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*76 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**692** (188)		9060		1	DEL	12/06/17 4:24	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	FV	Batch
Dioxin	**See Attached** (N/A)									

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.52)		6020A		20	NAR	12/04/17 15:26	2.26	100	CL70133
Arsenic	**17.0** (2.60)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133
Barium	**19.9** (2.60)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133
Beryllium	**0.49** (0.11)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133
Cadmium	ND (0.52)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133
Chromium	**46.6** (1.04)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133
Lead	**30.4** (5.20)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133
Mercury	ND (0.039)		7471B		1	BJV	12/05/17 13:46	0.6	40	CL70134
Nickel	**18.6** (2.60)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133
Selenium	ND (0.52)		6020A		20	NAR	12/04/17 15:26	2.26	100	CL70133
Silver	ND (0.52)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133
Thallium	ND (0.52)		6020A		20	NAR	12/04/17 15:26	2.26	100	CL70133
Vanadium	**13.6** (1.04)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133
Zinc	**26.0** (2.60)		6010C		1	KJK	12/05/17 10:24	2.26	100	CL70133

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,1,1-Trichloroethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,1,2-Trichloroethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,1-Dichloroethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,1-Dichloroethene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,1-Dichloropropene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,2,3-Trichlorobenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,2,3-Trichloropropane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,2,4-Trichlorobenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,2,4-Trimethylbenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,2-Dibromo-3-Chloropropane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,2-Dibromoethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,2-Dichlorobenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,2-Dichloroethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,2-Dichloropropane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,3,5-Trimethylbenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,3-Dichlorobenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,3-Dichloropropane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,4-Dichlorobenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
1,4-Dioxane	ND (0.0979)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
2,2-Dichloropropane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
2-Butanone	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
2-Chlorotoluene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
2-Hexanone	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
4-Chlorotoluene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
4-Isopropyltoluene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
4-Methyl-2-Pentanone	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Acetone	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Benzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Bromobenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Bromochloromethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Bromoform	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Bromomethane	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Carbon Disulfide	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Carbon Tetrachloride	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Chlorobenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Chloroethane	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Chloroform	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Chloromethane	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
cis-1,2-Dichloroethene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
cis-1,3-Dichloropropene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Dibromochloromethane	ND (0.0020)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Dibromomethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Dichlorodifluoromethane	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Diethyl Ether	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Di-isopropyl ether	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Ethyl tertiary-butyl ether	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Ethylbenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Hexachlorobutadiene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Isopropylbenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Methyl tert-Butyl Ether	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Methylene Chloride	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Naphthalene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
n-Butylbenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
n-Propylbenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
sec-Butylbenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Styrene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
tert-Butylbenzene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Tertiary-amyl methyl ether	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Tetrachloroethene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Tetrahydrofuran	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Toluene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
trans-1,3-Dichloropropene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Trichloroethene	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Trichlorofluoromethane	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Vinyl Chloride	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Xylene O	ND (0.0049)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Xylene P,M	ND (0.0098)		8260B Low		1	12/04/17 19:51	C7L0040	CL70426
Xylenes (Total)	ND (0.0098)		8260B Low		1	12/04/17 19:51		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*107 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
4,4´-DDE	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
4,4´-DDT	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Aldrin	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
alpha-BHC	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
alpha-Chlordane	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
beta-BHC	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Chlordane (Total)	ND (0.0245)		8081B		1	12/05/17 1:06	C7L0023	CL70414
delta-BHC	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Dieldrin	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Endosulfan I	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Endosulfan II	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Endosulfan Sulfate	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Endrin	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Endrin Ketone	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	12/05/17 1:06	C7L0023	CL70414
gamma-Chlordane	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Heptachlor	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Heptachlor Epoxide	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Hexachlorobenzene	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414
Methoxychlor	ND (0.0031)		8081B		1	12/05/17 1:06	C7L0023	CL70414

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*71 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*54 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*62 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 20.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/4/17 16:25

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/05/17 15:46		CL70410
Aroclor 1221	ND (0.06)		8082A		1	12/05/17 15:46		CL70410
Aroclor 1232	ND (0.06)		8082A		1	12/05/17 15:46		CL70410
Aroclor 1242	ND (0.06)		8082A		1	12/05/17 15:46		CL70410
Aroclor 1248	ND (0.06)		8082A		1	12/05/17 15:46		CL70410
Aroclor 1254	ND (0.06)		8082A		1	12/05/17 15:46		CL70410
Aroclor 1260	ND (0.06)		8082A		1	12/05/17 15:46		CL70410
Aroclor 1262	ND (0.06)		8082A		1	12/05/17 15:46		CL70410
Aroclor 1268	ND (0.06)		8082A		1	12/05/17 15:46		CL70410

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*88 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*91 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/5/17 15:30

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.011)		8151A		1	12/07/17 16:49	C7L0076	CL70530
2,4,5-TP (Silvex)	ND (0.011)		8151A		1	12/07/17 16:49	C7L0076	CL70530
2,4-D	ND (0.054)		8151A		1	12/07/17 16:49	C7L0076	CL70530
2,4-DB	ND (0.054)		8151A		1	12/07/17 16:49	C7L0076	CL70530
Dalapon	ND (0.052)		8151A		1	12/07/17 16:49	C7L0076	CL70530
Dicamba	ND (0.011)		8151A		1	12/07/17 16:49	C7L0076	CL70530
Dichlorprop	ND (0.054)		8151A		1	12/07/17 16:49	C7L0076	CL70530
Dinoseb	ND (0.054)		8151A		1	12/07/17 16:49	C7L0076	CL70530
MCPA	ND (2.65)		8151A		1	12/07/17 16:49	C7L0076	CL70530
MCPP	ND (2.68)		8151A		1	12/07/17 16:49	C7L0076	CL70530

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*36 %*		*30-150*
Surrogate: DCAA [2C]	*30 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
1,2-Dichlorobenzene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
1,3-Dichlorobenzene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
1,4-Dichlorobenzene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2,4,5-Trichlorophenol	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2,4,6-Trichlorophenol	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2,4-Dichlorophenol	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2,4-Dimethylphenol	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2,4-Dinitrophenol	ND (1.95)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2,4-Dinitrotoluene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2,6-Dinitrotoluene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2-Chloronaphthalene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2-Chlorophenol	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2-Methylnaphthalene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2-Methylphenol	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
2-Nitrophenol	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
3,3′-Dichlorobenzidine	ND (0.778)		8270D		1	12/06/17 0:16	C7L0051	CL70412
3+4-Methylphenol	ND (0.778)		8270D		1	12/06/17 0:16	C7L0051	CL70412
4-Bromophenyl-phenylether	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
4-Chloroaniline	ND (0.778)		8270D		1	12/06/17 0:16	C7L0051	CL70412
4-Nitrophenol	ND (1.95)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Acenaphthene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Acenaphthylene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Acetophenone	ND (0.778)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Aniline	ND (1.95)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Anthracene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Azobenzene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Benzo(a)anthracene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Benzo(a)pyrene	ND (0.195)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Benzo(b)fluoranthene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Benzo(g,h,i)perylene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Benzo(k)fluoranthene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
bis(2-Chloroethyl)ether	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
bis(2-chloroisopropyl)Ether	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
bis(2-Ethylhexyl)phthalate	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Butylbenzylphthalate	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Chrysene	ND (0.195)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Dibenzo(a,h)Anthracene	ND (0.195)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Dibenzofuran	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Diethylphthalate	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Dimethylphthalate	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Di-n-butylphthalate	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Di-n-octylphthalate	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Fluoranthene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Fluorene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Hexachlorobenzene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Hexachlorobutadiene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Hexachloroethane	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Indeno(1,2,3-cd)Pyrene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Isophorone	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Naphthalene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Nitrobenzene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
N-Nitrosodimethylamine	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Pentachlorophenol	ND (1.95)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Phenanthrene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Phenol	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412
Pyrene	ND (0.389)		8270D		1	12/06/17 0:16	C7L0051	CL70412

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*77 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*87 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*82 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*83 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*83 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*88 %*		*30-130*				
Surrogate: Phenol-d6		*84 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*82 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (195)		9060		1	DEL	12/06/17 4:41	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
				Total Metals						
Batch CK73030 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	21.1	1.60	mg/kg wet	17.80		119	67-133			
LCS Dup										
Mercury	22.0	1.65	mg/kg wet	17.80		123	67-133	4	20	
Batch CL70133 - 3050B										
Blank										
Antimony	ND	0.50	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	0.50	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	0.50	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	56.3	4.63	mg/kg wet	48.00		117	80-120			
Arsenic	122	9.26	mg/kg wet	123.0		99	80-120			
Barium	252	9.26	mg/kg wet	253.0		100	66-134			
Beryllium	171	0.41	mg/kg wet	192.0		89	80-120			
Cadmium	188	1.85	mg/kg wet	224.0		84	80-120			
Chromium	164	3.70	mg/kg wet	179.0		92	80-120			
Lead	135	18.5	mg/kg wet	145.0		93	80-120			
Nickel	140	9.26	mg/kg wet	143.0		98	80-120			
Selenium	42.4	4.63	mg/kg wet	42.40		100	80-120			
Silver	80.2	1.85	mg/kg wet	81.60		98	80-120			
Thallium	49.7	4.63	mg/kg wet	52.00		96	80-120			
Vanadium	64.2	3.70	mg/kg wet	72.30		89	80-120			
Zinc	685	9.26	mg/kg wet	770.0		89	80-120			
LCS Dup										
Antimony	57.6	4.63	mg/kg wet	48.00		120	80-120	2	30	
Arsenic	126	9.26	mg/kg wet	123.0		102	80-120	3	20	
Barium	200	9.26	mg/kg wet	253.0		79	66-134	23	20	D+
Beryllium	174	0.41	mg/kg wet	192.0		91	80-120	2	20	
Cadmium	194	1.85	mg/kg wet	224.0		87	80-120	3	20	
Chromium	170	3.70	mg/kg wet	179.0		95	80-120	3	20	
Lead	138	18.5	mg/kg wet	145.0		95	80-120	2	20	
Nickel	146	9.26	mg/kg wet	143.0		102	80-120	4	20	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CL70133 - 3050B										
Selenium	42.5	4.63	mg/kg wet	42.40		100	80-120	0.2	30	
Silver	83.8	1.85	mg/kg wet	81.60		103	80-120	4	20	
Thallium	52.0	4.63	mg/kg wet	52.00		100	80-120	4	30	
Vanadium	66.8	3.70	mg/kg wet	72.30		92	80-120	4	20	
Zinc	709	9.26	mg/kg wet	770.0		92	80-120	3	20	
Batch CL70134 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	16.5	1.80	mg/kg wet	17.80		93	80-120			
LCS Dup										
Mercury	17.7	1.87	mg/kg wet	17.80		99	80-120	7	20	
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70124 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70124 - 5035										
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0492*		mg/kg wet	*0.05000*		*98*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70124 - 5035										
Surrogate: 4-Bromofluorobenzene	*0.0477*		mg/kg wet	*0.05000*		*95*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0490*		mg/kg wet	*0.05000*		*98*	*70-130*			
Surrogate: Toluene-d8	*0.0519*		mg/kg wet	*0.05000*		*104*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,1,1-Trichloroethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,2,2-Tetrachloroethane	0.0444	0.0020	mg/kg wet	0.05000		89	70-130			
1,1,2-Trichloroethane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,1-Dichloroethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,1-Dichloroethene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloropropene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
1,2,3-Trichloropropane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,4-Trichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trimethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dibromo-3-Chloropropane	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dibromoethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dichloroethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichloropropane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
1,3,5-Trimethylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,3-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,3-Dichloropropane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,4-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,4-Dioxane	0.857	0.100	mg/kg wet	1.000		86	70-130			
2,2-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
2-Butanone	0.229	0.0100	mg/kg wet	0.2500		91	70-130			
2-Chlorotoluene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
2-Hexanone	0.194	0.0100	mg/kg wet	0.2500		78	70-130			
4-Chlorotoluene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
4-Isopropyltoluene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
4-Methyl-2-Pentanone	0.202	0.0100	mg/kg wet	0.2500		81	70-130			
Acetone	0.233	0.0100	mg/kg wet	0.2500		93	70-130			
Benzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Bromobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
Bromochloromethane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Bromodichloromethane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
Bromoform	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Bromomethane	0.0427	0.0100	mg/kg wet	0.05000		85	70-130			
Carbon Disulfide	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Carbon Tetrachloride	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Chlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Chloroethane	0.0464	0.0100	mg/kg wet	0.05000		93	70-130			
Chloroform	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70124 - 5035										
Chloromethane	0.0430	0.0100	mg/kg wet	0.05000		86	70-130			
cis-1,2-Dichloroethene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
cis-1,3-Dichloropropene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Dibromochloromethane	0.0434	0.0020	mg/kg wet	0.05000		87	70-130			
Dibromomethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Dichlorodifluoromethane	0.0393	0.0100	mg/kg wet	0.05000		79	70-130			
Diethyl Ether	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Di-isopropyl ether	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Ethyl tertiary-butyl ether	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Ethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Hexachlorobutadiene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
Isopropylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Methyl tert-Butyl Ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Methylene Chloride	0.0474	0.0100	mg/kg wet	0.05000		95	70-130			
Naphthalene	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
n-Butylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
sec-Butylbenzene	0.0386	0.0050	mg/kg wet	0.05000		77	70-130			
Styrene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
tert-Butylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Tertiary-amyl methyl ether	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrachloroethene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Tetrahydrofuran	0.0399	0.0050	mg/kg wet	0.05000		80	70-130			
Toluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
trans-1,2-Dichloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
trans-1,3-Dichloropropene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Trichloroethene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Vinyl Chloride	0.0447	0.0100	mg/kg wet	0.05000		89	70-130			
Xylene O	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Xylene P,M	0.0929	0.0100	mg/kg wet	0.1000		93	70-130			
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0503*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0479*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0502*		mg/kg wet	*0.05000*		*100*	*70-130*			
Surrogate: Toluene-d8	*0.0476*		mg/kg wet	*0.05000*		*95*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	3	20	
1,1,1-Trichloroethane	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	1	20	
1,1,2,2-Tetrachloroethane	0.0453	0.0020	mg/kg wet	0.05000		91	70-130	2	20	
1,1,2-Trichloroethane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	4	20	
1,1-Dichloroethane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	3	20	
1,1-Dichloroethene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	20	
1,1-Dichloropropene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	3	20	
1,2,3-Trichlorobenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	4	20	

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70124 - 5035										
1,2,3-Trichloropropane	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.9	20	
1,2,4-Trichlorobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	4	20	
1,2,4-Trimethylbenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
1,2-Dibromo-3-Chloropropane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	0.2	20	
1,2-Dibromoethane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	5	20	
1,2-Dichlorobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	3	20	
1,2-Dichloropropane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	20	
1,3,5-Trimethylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
1,3-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
1,3-Dichloropropane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	4	20	
1,4-Dichlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	1	20	
1,4-Dioxane	0.898	0.100	mg/kg wet	1.000		90	70-130	5	20	
2,2-Dichloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
2-Butanone	0.235	0.0100	mg/kg wet	0.2500		94	70-130	3	20	
2-Chlorotoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	2	20	
2-Hexanone	0.200	0.0100	mg/kg wet	0.2500		80	70-130	3	20	
4-Chlorotoluene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	1	20	
4-Isopropyltoluene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	2	20	
4-Methyl-2-Pentanone	0.207	0.0100	mg/kg wet	0.2500		83	70-130	2	20	
Acetone	0.235	0.0100	mg/kg wet	0.2500		94	70-130	0.8	20	
Benzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
Bromobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	2	20	
Bromochloromethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	4	20	
Bromodichloromethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	4	20	
Bromoform	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	4	20	
Bromomethane	0.0434	0.0100	mg/kg wet	0.05000		87	70-130	2	20	
Carbon Disulfide	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	2	20	
Carbon Tetrachloride	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	1	20	
Chlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	4	20	
Chloroethane	0.0477	0.0100	mg/kg wet	0.05000		95	70-130	3	20	
Chloroform	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	3	20	
Chloromethane	0.0444	0.0100	mg/kg wet	0.05000		89	70-130	3	20	
cis-1,2-Dichloroethene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	3	20	
cis-1,3-Dichloropropene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	4	20	
Dibromochloromethane	0.0456	0.0020	mg/kg wet	0.05000		91	70-130	5	20	
Dibromomethane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	5	20	
Dichlorodifluoromethane	0.0392	0.0100	mg/kg wet	0.05000		78	70-130	0.2	20	
Diethyl Ether	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	20	
Di-isopropyl ether	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	4	20	
Ethyl tertiary-butyl ether	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	6	20	
Ethylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
Hexachlorobutadiene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	1	20	
Isopropylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	1	20	
Methyl tert-Butyl Ether	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	6	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70124 - 5035										
Methylene Chloride	0.0492	0.0100	mg/kg wet	0.05000		98	70-130	4	20	
Naphthalene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130	4	20	
n-Butylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	1	20	
n-Propylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
sec-Butylbenzene	0.0394	0.0050	mg/kg wet	0.05000		79	70-130	2	20	
Styrene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	5	20	
tert-Butylbenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	2	20	
Tertiary-amyl methyl ether	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	5	20	
Tetrachloroethene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	3	20	
Tetrahydrofuran	0.0423	0.0050	mg/kg wet	0.05000		85	70-130	6	20	
Toluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
trans-1,2-Dichloroethene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	4	20	
trans-1,3-Dichloropropene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	4	20	
Trichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	3	20	
Trichlorofluoromethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	0.8	20	
Vinyl Chloride	0.0460	0.0100	mg/kg wet	0.05000		92	70-130	3	20	
Xylene O	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	4	20	
Xylene P,M	0.0963	0.0100	mg/kg wet	0.1000		96	70-130	4	20	
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0511*		mg/kg wet	*0.05000*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0481*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0502*		mg/kg wet	*0.05000*		*100*	*70-130*			
Surrogate: Toluene-d8	*0.0476*		mg/kg wet	*0.05000*		*95*	*70-130*			
Batch CL70426 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70426 - 5035										
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70426 - 5035										
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0465*		mg/kg wet	*0.05000*		*93*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0470*		mg/kg wet	*0.05000*		*94*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0475*		mg/kg wet	*0.05000*		*95*	*70-130*			
Surrogate: Toluene-d8	*0.0510*		mg/kg wet	*0.05000*		*102*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
1,1,1-Trichloroethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,1,2,2-Tetrachloroethane	0.0435	0.0020	mg/kg wet	0.05000		87	70-130			
1,1,2-Trichloroethane	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
1,1-Dichloroethane	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
1,1-Dichloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,1-Dichloropropene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,3-Trichlorobenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
1,2,3-Trichloropropane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,4-Trichlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
1,2,4-Trimethylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0422	0.0050	mg/kg wet	0.05000		84	70-130			
1,2-Dibromoethane	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichloroethane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dichloropropane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,3-Dichlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichloropropane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
1,4-Dichlorobenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,4-Dioxane	0.837	0.100	mg/kg wet	1.000		84	70-130			
2,2-Dichloropropane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
2-Butanone	0.220	0.0100	mg/kg wet	0.2500		88	70-130			
2-Chlorotoluene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
2-Hexanone	0.186	0.0100	mg/kg wet	0.2500		74	70-130			
4-Chlorotoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
4-Isopropyltoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
4-Methyl-2-Pentanone	0.195	0.0100	mg/kg wet	0.2500		78	70-130			
Acetone	0.213	0.0100	mg/kg wet	0.2500		85	70-130			
Benzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Bromobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Bromochloromethane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Bromodichloromethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70426 - 5035										
Bromoform	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Bromomethane	0.0421	0.0100	mg/kg wet	0.05000		84	70-130			
Carbon Disulfide	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Carbon Tetrachloride	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Chlorobenzene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Chloroethane	0.0442	0.0100	mg/kg wet	0.05000		88	70-130			
Chloroform	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Chloromethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130			
cis-1,2-Dichloroethene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
cis-1,3-Dichloropropene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
Dibromochloromethane	0.0424	0.0020	mg/kg wet	0.05000		85	70-130			
Dibromomethane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Dichlorodifluoromethane	0.0337	0.0100	mg/kg wet	0.05000		67	70-130			B-
Diethyl Ether	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Di-isopropyl ether	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
Ethyl tertiary-butyl ether	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Ethylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
Hexachlorobutadiene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Isopropylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Methyl tert-Butyl Ether	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Methylene Chloride	0.0462	0.0100	mg/kg wet	0.05000		92	70-130			
Naphthalene	0.0394	0.0050	mg/kg wet	0.05000		79	70-130			
n-Butylbenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
n-Propylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
sec-Butylbenzene	0.0372	0.0050	mg/kg wet	0.05000		74	70-130			
Styrene	0.0403	0.0050	mg/kg wet	0.05000		81	70-130			
tert-Butylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Tertiary-amyl methyl ether	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrachloroethene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Tetrahydrofuran	0.0383	0.0050	mg/kg wet	0.05000		77	70-130			
Toluene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
trans-1,2-Dichloroethene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
trans-1,3-Dichloropropene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Trichloroethene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
Trichlorofluoromethane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Vinyl Chloride	0.0422	0.0100	mg/kg wet	0.05000		84	70-130			
Xylene O	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Xylene P,M	0.0894	0.0100	mg/kg wet	0.1000		89	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0479*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0470*		mg/kg wet	*0.05000*		*94*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0493*		mg/kg wet	*0.05000*		*99*	*70-130*			
Surrogate: Toluene-d8	*0.0472*		mg/kg wet	*0.05000*		*94*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	0.8	20	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70426 - 5035										
1,1,1-Trichloroethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	2	20	
1,1,2,2-Tetrachloroethane	0.0437	0.0020	mg/kg wet	0.05000		87	70-130	0.5	20	
1,1,2-Trichloroethane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	6	20	
1,1-Dichloroethane	0.0442	0.0050	mg/kg wet	0.05000		88	70-130	0.05	20	
1,1-Dichloroethene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	2	20	
1,1-Dichloropropene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	2	20	
1,2,3-Trichlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	2	20	
1,2,3-Trichloropropane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	0.4	20	
1,2,4-Trichlorobenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	1	20	
1,2,4-Trimethylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
1,2-Dibromo-3-Chloropropane	0.0429	0.0050	mg/kg wet	0.05000		86	70-130	2	20	
1,2-Dibromoethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	5	20	
1,2-Dichlorobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	2	20	
1,2-Dichloroethane	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	4	20	
1,2-Dichloropropane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	3	20	
1,3,5-Trimethylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	5	20	
1,3-Dichlorobenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	1	20	
1,3-Dichloropropane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	4	20	
1,4-Dichlorobenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	2	20	
1,4-Dioxane	0.890	0.100	mg/kg wet	1.000		89	70-130	6	20	
2,2-Dichloropropane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	3	20	
2-Butanone	0.230	0.0100	mg/kg wet	0.2500		92	70-130	4	20	
2-Chlorotoluene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130	4	20	
2-Hexanone	0.193	0.0100	mg/kg wet	0.2500		77	70-130	4	20	
4-Chlorotoluene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	5	20	
4-Isopropyltoluene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	5	20	
4-Methyl-2-Pentanone	0.207	0.0100	mg/kg wet	0.2500		83	70-130	6	20	
Acetone	0.230	0.0100	mg/kg wet	0.2500		92	70-130	8	20	
Benzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	0.04	20	
Bromobenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	2	20	
Bromochloromethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	4	20	
Bromodichloromethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	3	20	
Bromoform	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	4	20	
Bromomethane	0.0414	0.0100	mg/kg wet	0.05000		83	70-130	2	20	
Carbon Disulfide	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	4	20	
Carbon Tetrachloride	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	3	20	
Chlorobenzene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130	0.3	20	
Chloroethane	0.0433	0.0100	mg/kg wet	0.05000		87	70-130	2	20	
Chloroform	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	0.7	20	
Chloromethane	0.0406	0.0100	mg/kg wet	0.05000		81	70-130	2	20	
cis-1,2-Dichloroethene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	2	20	
cis-1,3-Dichloropropene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	3	20	
Dibromochloromethane	0.0439	0.0020	mg/kg wet	0.05000		88	70-130	3	20	
Dibromomethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
Dichlorodifluoromethane	0.0321	0.0100	mg/kg wet	0.05000		64	70-130	5	20	B-

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL70426 - 5035										
Diethyl Ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	6	20	
Di-isopropyl ether	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	4	20	
Ethyl tertiary-butyl ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	5	20	
Ethylbenzene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	2	20	
Hexachlorobutadiene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	4	20	
Isopropylbenzene	0.0427	0.0050	mg/kg wet	0.05000		85	70-130	6	20	
Methyl tert-Butyl Ether	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	6	20	
Methylene Chloride	0.0472	0.0100	mg/kg wet	0.05000		94	70-130	2	20	
Naphthalene	0.0402	0.0050	mg/kg wet	0.05000		80	70-130	2	20	
n-Butylbenzene	0.0427	0.0050	mg/kg wet	0.05000		85	70-130	5	20	
n-Propylbenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	6	20	
sec-Butylbenzene	0.0355	0.0050	mg/kg wet	0.05000		71	70-130	4	20	
Styrene	0.0409	0.0050	mg/kg wet	0.05000		82	70-130	1	20	
tert-Butylbenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	6	20	
Tertiary-amyl methyl ether	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	6	20	
Tetrachloroethene	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	4	20	
Tetrahydrofuran	0.0418	0.0050	mg/kg wet	0.05000		84	70-130	9	20	
Toluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	0.8	20	
trans-1,2-Dichloroethene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	0.7	20	
trans-1,3-Dichloropropene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
Trichloroethene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	0.7	20	
Trichlorofluoromethane	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	4	20	
Vinyl Chloride	0.0403	0.0100	mg/kg wet	0.05000		81	70-130	5	20	
Xylene O	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	0.7	20	
Xylene P,M	0.0879	0.0100	mg/kg wet	0.1000		88	70-130	2	20	
Xylenes (Total)	0.133	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0513*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0493*		mg/kg wet	*0.05000*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0516*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0478*		mg/kg wet	*0.05000*		*96*	*70-130*			
8081B Organochlorine Pesticides										
Batch CL70414 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL70414 - 3546										
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
Chlordane (Total)	ND	0.0200	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0200	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0103*		mg/kg wet	*0.01250*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0112*		mg/kg wet	*0.01250*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00867*		mg/kg wet	*0.01250*		*69*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.00977*		mg/kg wet	*0.01250*		*78*	*30-150*			
LCS										
4,4´-DDD	0.0094	0.0025	mg/kg wet	0.01250		76	40-140			
4,4´-DDD [2C]	0.0106	0.0025	mg/kg wet	0.01250		84	40-140			
4,4´-DDE	0.0091	0.0025	mg/kg wet	0.01250		73	40-140			
4,4´-DDE [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
4,4´-DDT	0.0088	0.0025	mg/kg wet	0.01250		71	40-140			
4,4´-DDT [2C]	0.0103	0.0025	mg/kg wet	0.01250		82	40-140			
Aldrin	0.0094	0.0025	mg/kg wet	0.01250		76	40-140			
Aldrin [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL70414 - 3546										
alpha-BHC	0.0091	0.0025	mg/kg wet	0.01250		72	40-140			
alpha-BHC [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
alpha-Chlordane	0.0091	0.0025	mg/kg wet	0.01250		73	40-140			
alpha-Chlordane [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
beta-BHC	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
beta-BHC [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
delta-BHC	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
delta-BHC [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Dieldrin	0.0102	0.0025	mg/kg wet	0.01250		81	40-140			
Dieldrin [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
Endosulfan I	0.0099	0.0025	mg/kg wet	0.01250		80	40-140			
Endosulfan I [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
Endosulfan II	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
Endosulfan II [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Endosulfan Sulfate	0.0094	0.0025	mg/kg wet	0.01250		75	40-140			
Endosulfan Sulfate [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
Endrin	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
Endrin [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Endrin Ketone	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
Endrin Ketone [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
gamma-BHC (Lindane)	0.0093	0.0015	mg/kg wet	0.01250		74	40-140			
gamma-BHC (Lindane) [2C]	0.0108	0.0015	mg/kg wet	0.01250		86	40-140			
gamma-Chlordane	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
gamma-Chlordane [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Heptachlor	0.0091	0.0025	mg/kg wet	0.01250		73	40-140			
Heptachlor [2C]	0.0107	0.0025	mg/kg wet	0.01250		85	40-140			
Heptachlor Epoxide	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
Heptachlor Epoxide [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140			
Hexachlorobenzene	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Hexachlorobenzene [2C]	0.0119	0.0025	mg/kg wet	0.01250		96	40-140			
Methoxychlor	0.0087	0.0025	mg/kg wet	0.01250		69	40-140			
Methoxychlor [2C]	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
Surrogate: Decachlorobiphenyl	*0.0105*		mg/kg wet	*0.01250*		*84*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0121*		mg/kg wet	*0.01250*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00907*		mg/kg wet	*0.01250*		*73*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0102*		mg/kg wet	*0.01250*		*81*	*30-150*			
LCS Dup										
4,4´-DDD	0.0096	0.0025	mg/kg wet	0.01250		77	40-140	2	30	
4,4´-DDD [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	1	30	
4,4´-DDE	0.0093	0.0025	mg/kg wet	0.01250		75	40-140	3	30	
4,4´-DDE [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	2	30	
4,4´-DDT	0.0092	0.0025	mg/kg wet	0.01250		73	40-140	4	30	
4,4´-DDT [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	2	30	
Aldrin	0.0097	0.0025	mg/kg wet	0.01250		77	40-140	2	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL70414 - 3546										
Aldrin [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	0.08	30	
alpha-BHC	0.0091	0.0025	mg/kg wet	0.01250		73	40-140	0.7	30	
alpha-BHC [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	0.01	30	
alpha-Chlordane	0.0093	0.0025	mg/kg wet	0.01250		74	40-140	2	30	
alpha-Chlordane [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	3	30	
beta-BHC	0.0091	0.0025	mg/kg wet	0.01250		73	40-140	1	30	
beta-BHC [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	0.02	30	
delta-BHC	0.0090	0.0025	mg/kg wet	0.01250		72	40-140	0.2	30	
delta-BHC [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	0.5	30	
Dieldrin	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	2	30	
Dieldrin [2C]	0.0113	0.0025	mg/kg wet	0.01250		91	40-140	3	30	
Endosulfan I	0.0101	0.0025	mg/kg wet	0.01250		81	40-140	2	30	
Endosulfan I [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	2	30	
Endosulfan II	0.0097	0.0025	mg/kg wet	0.01250		77	40-140	1	30	
Endosulfan II [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	2	30	
Endosulfan Sulfate	0.0096	0.0025	mg/kg wet	0.01250		77	40-140	2	30	
Endosulfan Sulfate [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	0.7	30	
Endrin	0.0096	0.0025	mg/kg wet	0.01250		77	40-140	2	30	
Endrin [2C]	0.0113	0.0025	mg/kg wet	0.01250		91	40-140	0.4	30	
Endrin Ketone	0.0100	0.0025	mg/kg wet	0.01250		80	40-140	1	30	
Endrin Ketone [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	2	30	
gamma-BHC (Lindane)	0.0093	0.0015	mg/kg wet	0.01250		74	40-140	0.06	30	
gamma-BHC (Lindane) [2C]	0.0107	0.0015	mg/kg wet	0.01250		86	40-140	0.8	30	
gamma-Chlordane	0.0095	0.0025	mg/kg wet	0.01250		76	40-140	2	30	
gamma-Chlordane [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140	2	30	
Heptachlor	0.0093	0.0025	mg/kg wet	0.01250		74	40-140	2	30	
Heptachlor [2C]	0.0107	0.0025	mg/kg wet	0.01250		85	40-140	0.2	30	
Heptachlor Epoxide	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	1	30	
Heptachlor Epoxide [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	0.2	30	
Hexachlorobenzene	0.0111	0.0025	mg/kg wet	0.01250		88	40-140	2	30	
Hexachlorobenzene [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140	1	30	
Methoxychlor	0.0089	0.0025	mg/kg wet	0.01250		71	40-140	2	30	
Methoxychlor [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	3	30	
Surrogate: Decachlorobiphenyl	*0.0110*		mg/kg wet	*0.01250*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0122*		mg/kg wet	*0.01250*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00957*		mg/kg wet	*0.01250*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0106*		mg/kg wet	*0.01250*		*85*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CL70107 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CL70107 - 3540C										
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0221*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0235*		mg/kg wet	*0.02500*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0186*		mg/kg wet	*0.02500*		*74*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		92	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		97	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		99	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		91	40-140			
Surrogate: Decachlorobiphenyl	*0.0236*		mg/kg wet	*0.02500*		*94*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0245*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0211*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0210*		mg/kg wet	*0.02500*		*84*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		99	40-140	7	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		98	40-140	2	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		101	40-140	2	30	
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		90	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0225*		mg/kg wet	*0.02500*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0237*		mg/kg wet	*0.02500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0210*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0208*		mg/kg wet	*0.02500*		*83*	*30-150*			
Batch CL70409 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CL70409 - 3540C										
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0232*		mg/kg wet	*0.02500*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0258*		mg/kg wet	*0.02500*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0268*		mg/kg wet	*0.02500*		*107*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		96	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		106	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		98	40-140			
Aroclor 1260 [2C]	0.6	0.05	mg/kg wet	0.5000		112	40-140			
Surrogate: Decachlorobiphenyl	*0.0246*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0257*		mg/kg wet	*0.02500*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0242*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0264*		mg/kg wet	*0.02500*		*105*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		94	40-140	1	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		107	40-140	0.9	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		96	40-140	1	30	
Aroclor 1260 [2C]	0.6	0.05	mg/kg wet	0.5000		112	40-140	0.6	30	
Surrogate: Decachlorobiphenyl	*0.0241*		mg/kg wet	*0.02500*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0250*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0238*		mg/kg wet	*0.02500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0250*		mg/kg wet	*0.02500*		*100*	*30-150*			
Batch CL70410 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CL70410 - 3540C										
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0245*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0253*		mg/kg wet	*0.02500*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0195*		mg/kg wet	*0.02500*		*78*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0213*		mg/kg wet	*0.02500*		*85*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		92	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		94	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		100	40-140			
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		89	40-140			
Surrogate: Decachlorobiphenyl	*0.0239*		mg/kg wet	*0.02500*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0244*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0202*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0202*		mg/kg wet	*0.02500*		*81*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		92	40-140	0.08	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		95	40-140	1	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		102	40-140	2	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		90	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0247*		mg/kg wet	*0.02500*		*99*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0249*		mg/kg wet	*0.02500*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0206*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0206*		mg/kg wet	*0.02500*		*82*	*30-150*			
8151A Chlorinated Herbicides										
Batch CL70139 - 3546										
Blank										
2,4,5-T	ND	0.010	mg/kg wet							

CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL70139 - 3546										
2,4,5-T [2C]	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex)	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	0.010	mg/kg wet							
2,4-D	ND	0.047	mg/kg wet							
2,4-D [2C]	ND	0.047	mg/kg wet							
2,4-DB	ND	0.048	mg/kg wet							
2,4-DB [2C]	ND	0.048	mg/kg wet							
Dalapon	ND	0.046	mg/kg wet							
Dalapon [2C]	ND	0.046	mg/kg wet							
Dicamba	ND	0.009	mg/kg wet							
Dicamba [2C]	ND	0.009	mg/kg wet							
Dichlorprop	ND	0.047	mg/kg wet							
Dichlorprop [2C]	ND	0.047	mg/kg wet							
Dinoseb	ND	0.048	mg/kg wet							
Dinoseb [2C]	ND	0.048	mg/kg wet							
MCPA	ND	2.32	mg/kg wet							
MCPA [2C]	ND	2.32	mg/kg wet							
MCPP	ND	2.35	mg/kg wet							
MCPP [2C]	ND	2.35	mg/kg wet							
Surrogate: DCAA	*0.155*		mg/kg wet	*0.2000*		*78*	*30-150*			
Surrogate: DCAA [2C]	*0.169*		mg/kg wet	*0.2000*		*84*	*30-150*			
LCS										
2,4,5-T	0.015	0.010	mg/kg wet	0.01900		78	40-140			
2,4,5-T [2C]	0.014	0.010	mg/kg wet	0.01900		74	40-140			
2,4,5-TP (Silvex)	0.016	0.010	mg/kg wet	0.01900		82	40-140			
2,4,5-TP (Silvex) [2C]	0.016	0.010	mg/kg wet	0.01900		84	40-140			
2,4-D	0.126	0.047	mg/kg wet	0.1880		67	40-140			
2,4-D [2C]	0.142	0.047	mg/kg wet	0.1880		76	40-140			
2,4-DB	0.146	0.048	mg/kg wet	0.1900		77	40-140			
2,4-DB [2C]	0.140	0.048	mg/kg wet	0.1900		74	40-140			
Dalapon	0.271	0.046	mg/kg wet	0.4550		60	40-140			
Dalapon [2C]	0.347	0.046	mg/kg wet	0.4550		76	40-140			
Dicamba	0.015	0.009	mg/kg wet	0.01880		78	40-140			
Dicamba [2C]	0.016	0.009	mg/kg wet	0.01880		84	40-140			
Dichlorprop	0.156	0.047	mg/kg wet	0.1880		83	40-140			
Dichlorprop [2C]	0.161	0.047	mg/kg wet	0.1880		85	40-140			
Dinoseb	0.023	0.048	mg/kg wet	0.09500		24	10-100			
Dinoseb [2C]	0.023	0.048	mg/kg wet	0.09500		24	10-100			
MCPA	18.1	2.32	mg/kg wet	18.60		97	40-140			
MCPA [2C]	16.9	2.32	mg/kg wet	18.60		91	40-140			
MCPP	14.4	2.35	mg/kg wet	18.80		77	40-140			
MCPP [2C]	16.1	2.35	mg/kg wet	18.80		86	40-140			
Surrogate: DCAA	*0.161*		mg/kg wet	*0.2000*		*80*	*30-150*			
Surrogate: DCAA [2C]	*0.170*		mg/kg wet	*0.2000*		*85*	*30-150*			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL70139 - 3546										
LCS Dup										
2,4,5-T	0.014	0.010	mg/kg wet	0.01900		76	40-140	3	30	
2,4,5-T [2C]	0.016	0.010	mg/kg wet	0.01900		82	40-140	10	30	
2,4,5-TP (Silvex)	0.016	0.010	mg/kg wet	0.01900		86	40-140	5	30	
2,4,5-TP (Silvex) [2C]	0.016	0.010	mg/kg wet	0.01900		86	40-140	2	30	
2,4-D	0.139	0.047	mg/kg wet	0.1880		74	40-140	10	30	
2,4-D [2C]	0.153	0.047	mg/kg wet	0.1880		82	40-140	8	30	
2,4-DB	0.152	0.048	mg/kg wet	0.1900		80	40-140	4	30	
2,4-DB [2C]	0.155	0.048	mg/kg wet	0.1900		81	40-140	10	30	
Dalapon	0.269	0.046	mg/kg wet	0.4550		59	40-140	0.7	30	
Dalapon [2C]	0.354	0.046	mg/kg wet	0.4550		78	40-140	2	30	
Dicamba	0.016	0.009	mg/kg wet	0.01880		84	40-140	7	30	
Dicamba [2C]	0.018	0.009	mg/kg wet	0.01880		96	40-140	13	30	
Dichlorprop	0.164	0.047	mg/kg wet	0.1880		87	40-140	4	30	
Dichlorprop [2C]	0.171	0.047	mg/kg wet	0.1880		91	40-140	6	30	
Dinoseb	0.033	0.048	mg/kg wet	0.09500		35	10-100	38	30	D+
Dinoseb [2C]	0.035	0.048	mg/kg wet	0.09500		37	10-100	41	30	D+
MCPA	18.4	2.32	mg/kg wet	18.60		99	40-140	2	30	
MCPA [2C]	16.2	2.32	mg/kg wet	18.60		87	40-140	4	30	
MCPP	15.5	2.35	mg/kg wet	18.80		83	40-140	8	30	
MCPP [2C]	17.2	2.35	mg/kg wet	18.80		92	40-140	6	30	
Surrogate: DCAA	*0.166*		mg/kg wet	*0.2000*		*83*	*30-150*			
Surrogate: DCAA [2C]	*0.188*		mg/kg wet	*0.2000*		*94*	*30-150*			
Batch CL70530 - 3546										
Blank										
2,4,5-T	ND	0.010	mg/kg wet							
2,4,5-T [2C]	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex)	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	0.010	mg/kg wet							
2,4-D	ND	0.047	mg/kg wet							
2,4-D [2C]	ND	0.047	mg/kg wet							
2,4-DB	ND	0.048	mg/kg wet							
2,4-DB [2C]	ND	0.048	mg/kg wet							
Dalapon	ND	0.046	mg/kg wet							
Dalapon [2C]	ND	0.046	mg/kg wet							
Dicamba	ND	0.009	mg/kg wet							
Dicamba [2C]	ND	0.009	mg/kg wet							
Dichlorprop	ND	0.047	mg/kg wet							
Dichlorprop [2C]	ND	0.047	mg/kg wet							
Dinoseb	ND	0.048	mg/kg wet							
Dinoseb [2C]	ND	0.048	mg/kg wet							
MCPA	ND	2.32	mg/kg wet							
MCPA [2C]	ND	2.32	mg/kg wet							
MCPP	ND	2.35	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL70530 - 3546										
MCPP [2C]	ND	2.35	mg/kg wet							
Surrogate: DCAA	*0.135*		mg/kg wet	*0.2000*		*68*	*30-150*			
Surrogate: DCAA [2C]	*0.150*		mg/kg wet	*0.2000*		*75*	*30-150*			
LCS										
2,4,5-T	0.013	0.010	mg/kg wet	0.01900		68	40-140			
2,4,5-T [2C]	0.013	0.010	mg/kg wet	0.01900		66	40-140			
2,4,5-TP (Silvex)	0.014	0.010	mg/kg wet	0.01900		72	40-140			
2,4,5-TP (Silvex) [2C]	0.014	0.010	mg/kg wet	0.01900		74	40-140			
2,4-D	0.121	0.047	mg/kg wet	0.1880		64	40-140			
2,4-D [2C]	0.133	0.047	mg/kg wet	0.1880		71	40-140			
2,4-DB	0.133	0.048	mg/kg wet	0.1900		70	40-140			
2,4-DB [2C]	0.138	0.048	mg/kg wet	0.1900		73	40-140			
Dalapon	0.207	0.046	mg/kg wet	0.4550		45	40-140			
Dalapon [2C]	0.251	0.046	mg/kg wet	0.4550		55	40-140			
Dicamba	0.012	0.009	mg/kg wet	0.01880		64	40-140			
Dicamba [2C]	0.014	0.009	mg/kg wet	0.01880		74	40-140			
Dichlorprop	0.138	0.047	mg/kg wet	0.1880		73	40-140			
Dichlorprop [2C]	0.141	0.047	mg/kg wet	0.1880		75	40-140			
Dinoseb	0.016	0.048	mg/kg wet	0.09500		17	10-100			
Dinoseb [2C]	0.016	0.048	mg/kg wet	0.09500		17	10-100			
MCPA	13.6	2.32	mg/kg wet	18.60		73	40-140			
MCPA [2C]	13.6	2.32	mg/kg wet	18.60		73	40-140			
MCPP	12.3	2.35	mg/kg wet	18.80		66	40-140			
MCPP [2C]	13.6	2.35	mg/kg wet	18.80		72	40-140			
Surrogate: DCAA	*0.154*		mg/kg wet	*0.2000*		*77*	*30-150*			
Surrogate: DCAA [2C]	*0.151*		mg/kg wet	*0.2000*		*75*	*30-150*			
LCS Dup										
2,4,5-T	0.013	0.010	mg/kg wet	0.01900		66	40-140	3	30	
2,4,5-T [2C]	0.011	0.010	mg/kg wet	0.01900		60	40-140	10	30	
2,4,5-TP (Silvex)	0.014	0.010	mg/kg wet	0.01900		76	40-140	5	30	
2,4,5-TP (Silvex) [2C]	0.013	0.010	mg/kg wet	0.01900		66	40-140	11	30	
2,4-D	0.111	0.047	mg/kg wet	0.1880		59	40-140	8	30	
2,4-D [2C]	0.123	0.047	mg/kg wet	0.1880		65	40-140	8	30	
2,4-DB	0.133	0.048	mg/kg wet	0.1900		70	40-140	0	30	
2,4-DB [2C]	0.128	0.048	mg/kg wet	0.1900		67	40-140	8	30	
Dalapon	0.217	0.046	mg/kg wet	0.4550		48	40-140	5	30	
Dalapon [2C]	0.379	0.046	mg/kg wet	0.4550		83	40-140	41	30	D+
Dicamba	0.012	0.009	mg/kg wet	0.01880		62	40-140	3	30	
Dicamba [2C]	0.013	0.009	mg/kg wet	0.01880		68	40-140	8	30	
Dichlorprop	0.134	0.047	mg/kg wet	0.1880		71	40-140	3	30	
Dichlorprop [2C]	0.126	0.047	mg/kg wet	0.1880		67	40-140	11	30	
Dinoseb	0.014	0.048	mg/kg wet	0.09500		15	10-100	13	30	
Dinoseb [2C]	0.015	0.048	mg/kg wet	0.09500		16	10-100	5	30	
MCPA	12.2	2.32	mg/kg wet	18.60		66	40-140	11	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL70530 - 3546										
MCPA [2C]	12.4	2.32	mg/kg wet	18.60		67	40-140	9	30	
MCPP	11.3	2.35	mg/kg wet	18.80		60	40-140	9	30	
MCPP [2C]	12.5	2.35	mg/kg wet	18.80		66	40-140	9	30	
Surrogate: DCAA	*0.139*		mg/kg wet	*0.2000*		*70*	*30-150*			
Surrogate: DCAA [2C]	*0.146*		mg/kg wet	*0.2000*		*73*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CL70110 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.167	mg/kg wet							
1,4-Dichlorobenzene	ND	0.090	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.167	mg/kg wet							
2,4-Dichlorophenol	ND	0.090	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	0.667	mg/kg wet							
2,4-Dinitrotoluene	ND	0.167	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.100	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.167	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.167	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.167	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.090	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.090	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL70110 - 3546										
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.083	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.083	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.090	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	0.667	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*3.14*		mg/kg wet	*3.333*		*94*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*6.36*		mg/kg wet	*5.000*		*127*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*5.03*		mg/kg wet	*5.000*		*101*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.51*		mg/kg wet	*3.333*		*105*	*30-130*			
Surrogate: 2-Fluorophenol	*5.06*		mg/kg wet	*5.000*		*101*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.48*		mg/kg wet	*3.333*		*104*	*30-130*			
Surrogate: Phenol-d6	*5.20*		mg/kg wet	*5.000*		*104*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.86*		mg/kg wet	*3.333*		*116*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.91	0.333	mg/kg wet	3.333		87	40-140			
1,2-Dichlorobenzene	2.64	0.333	mg/kg wet	3.333		79	40-140			
1,3-Dichlorobenzene	2.69	0.333	mg/kg wet	3.333		81	40-140			
1,4-Dichlorobenzene	2.67	0.333	mg/kg wet	3.333		80	40-140			
2,4,5-Trichlorophenol	3.34	0.333	mg/kg wet	3.333		100	30-130			
2,4,6-Trichlorophenol	3.28	0.333	mg/kg wet	3.333		98	30-130			
2,4-Dichlorophenol	2.93	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dimethylphenol	2.96	0.333	mg/kg wet	3.333		89	30-130			
2,4-Dinitrophenol	2.35	1.67	mg/kg wet	3.333		71	30-130			
2,4-Dinitrotoluene	2.90	0.333	mg/kg wet	3.333		87	40-140			
2,6-Dinitrotoluene	2.79	0.333	mg/kg wet	3.333		84	40-140			
2-Chloronaphthalene	2.75	0.333	mg/kg wet	3.333		82	40-140			
2-Chlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL70110 - 3546										
2-Methylnaphthalene	2.68	0.333	mg/kg wet	3.333		80	40-140			
2-Methylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130			
2-Nitrophenol	3.00	0.333	mg/kg wet	3.333		90	30-130			
3,3´-Dichlorobenzidine	2.22	0.667	mg/kg wet	3.333		67	40-140			
3+4-Methylphenol	5.60	0.667	mg/kg wet	6.667		84	30-130			
4-Bromophenyl-phenylether	3.17	0.333	mg/kg wet	3.333		95	40-140			
4-Chloroaniline	2.01	0.667	mg/kg wet	3.333		60	40-140			
4-Nitrophenol	2.47	1.67	mg/kg wet	3.333		74	30-130			
Acenaphthene	2.79	0.333	mg/kg wet	3.333		84	40-140			
Acenaphthylene	2.88	0.333	mg/kg wet	3.333		86	40-140			
Acetophenone	2.76	0.667	mg/kg wet	3.333		83	40-140			
Aniline	2.41	1.67	mg/kg wet	3.333		72	40-140			
Anthracene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Azobenzene	3.10	0.333	mg/kg wet	3.333		93	40-140			
Benzo(a)anthracene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Benzo(a)pyrene	2.90	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	2.80	0.333	mg/kg wet	3.333		84	40-140			
Benzo(g,h,i)perylene	3.12	0.333	mg/kg wet	3.333		93	40-140			
Benzo(k)fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
bis(2-Chloroethoxy)methane	2.82	0.333	mg/kg wet	3.333		85	40-140			
bis(2-Chloroethyl)ether	3.04	0.333	mg/kg wet	3.333		91	40-140			
bis(2-chloroisopropyl)Ether	2.45	0.333	mg/kg wet	3.333		74	40-140			
bis(2-Ethylhexyl)phthalate	2.94	0.333	mg/kg wet	3.333		88	40-140			
Butylbenzylphthalate	2.88	0.333	mg/kg wet	3.333		87	40-140			
Chrysene	2.87	0.167	mg/kg wet	3.333		86	40-140			
Dibenzo(a,h)Anthracene	3.19	0.167	mg/kg wet	3.333		96	40-140			
Dibenzofuran	2.83	0.333	mg/kg wet	3.333		85	40-140			
Diethylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Dimethylphthalate	2.91	0.333	mg/kg wet	3.333		87	40-140			
Di-n-butylphthalate	3.05	0.333	mg/kg wet	3.333		92	40-140			
Di-n-octylphthalate	2.77	0.333	mg/kg wet	3.333		83	40-140			
Fluoranthene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Fluorene	2.88	0.333	mg/kg wet	3.333		86	40-140			
Hexachlorobenzene	3.19	0.333	mg/kg wet	3.333		96	40-140			
Hexachlorobutadiene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Hexachloroethane	3.91	0.333	mg/kg wet	3.333		117	40-140			
Indeno(1,2,3-cd)Pyrene	3.15	0.333	mg/kg wet	3.333		94	40-140			
Isophorone	2.61	0.333	mg/kg wet	3.333		78	40-140			
Naphthalene	2.85	0.333	mg/kg wet	3.333		85	40-140			
Nitrobenzene	2.91	0.333	mg/kg wet	3.333		87	40-140			
N-Nitrosodimethylamine	2.21	0.333	mg/kg wet	3.333		66	40-140			
Pentachlorophenol	2.93	1.67	mg/kg wet	3.333		88	30-130			
Phenanthrene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Phenol	2.75	0.333	mg/kg wet	3.333		82	30-130			
Pyrene	2.80	0.333	mg/kg wet	3.333		84	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL70110 - 3546										
Surrogate: 1,2-Dichlorobenzene-d4	*2.99*		mg/kg wet	*3.333*		*90*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*6.34*		mg/kg wet	*5.000*		*127*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*4.98*		mg/kg wet	*5.000*		*100*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.54*		mg/kg wet	*3.333*		*106*	*30-130*			
Surrogate: 2-Fluorophenol	*5.04*		mg/kg wet	*5.000*		*101*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.53*		mg/kg wet	*3.333*		*106*	*30-130*			
Surrogate: Phenol-d6	*5.16*		mg/kg wet	*5.000*		*103*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.56*		mg/kg wet	*3.333*		*107*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	3.04	0.333	mg/kg wet	3.333		91	40-140	4	30	
1,2-Dichlorobenzene	2.86	0.333	mg/kg wet	3.333		86	40-140	8	30	
1,3-Dichlorobenzene	2.90	0.333	mg/kg wet	3.333		87	40-140	7	30	
1,4-Dichlorobenzene	2.88	0.333	mg/kg wet	3.333		86	40-140	7	30	
2,4,5-Trichlorophenol	3.40	0.333	mg/kg wet	3.333		102	30-130	2	30	
2,4,6-Trichlorophenol	3.26	0.333	mg/kg wet	3.333		98	30-130	0.6	30	
2,4-Dichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130	0.4	30	
2,4-Dimethylphenol	2.97	0.333	mg/kg wet	3.333		89	30-130	0.4	30	
2,4-Dinitrophenol	2.70	1.67	mg/kg wet	3.333		81	30-130	14	30	
2,4-Dinitrotoluene	3.21	0.333	mg/kg wet	3.333		96	40-140	10	30	
2,6-Dinitrotoluene	2.99	0.333	mg/kg wet	3.333		90	40-140	7	30	
2-Chloronaphthalene	2.87	0.333	mg/kg wet	3.333		86	40-140	4	30	
2-Chlorophenol	2.73	0.333	mg/kg wet	3.333		82	30-130	0.6	30	
2-Methylnaphthalene	2.78	0.333	mg/kg wet	3.333		83	40-140	4	30	
2-Methylphenol	2.62	0.333	mg/kg wet	3.333		79	30-130	3	30	
2-Nitrophenol	3.10	0.333	mg/kg wet	3.333		93	30-130	3	30	
3,3´-Dichlorobenzidine	2.34	0.667	mg/kg wet	3.333		70	40-140	5	30	
3+4-Methylphenol	5.40	0.667	mg/kg wet	6.667		81	30-130	4	30	
4-Bromophenyl-phenylether	3.00	0.333	mg/kg wet	3.333		90	40-140	6	30	
4-Chloroaniline	2.00	0.667	mg/kg wet	3.333		60	40-140	0.3	30	
4-Nitrophenol	2.81	1.67	mg/kg wet	3.333		84	30-130	13	30	
Acenaphthene	2.91	0.333	mg/kg wet	3.333		87	40-140	4	30	
Acenaphthylene	3.00	0.333	mg/kg wet	3.333		90	40-140	4	30	
Acetophenone	2.76	0.667	mg/kg wet	3.333		83	40-140	0.2	30	
Aniline	2.26	1.67	mg/kg wet	3.333		68	40-140	7	30	
Anthracene	3.11	0.333	mg/kg wet	3.333		93	40-140	4	30	
Azobenzene	2.98	0.333	mg/kg wet	3.333		90	40-140	4	30	
Benzo(a)anthracene	3.05	0.333	mg/kg wet	3.333		91	40-140	5	30	
Benzo(a)pyrene	3.07	0.167	mg/kg wet	3.333		92	40-140	6	30	
Benzo(b)fluoranthene	3.13	0.333	mg/kg wet	3.333		94	40-140	11	30	
Benzo(g,h,i)perylene	3.20	0.333	mg/kg wet	3.333		96	40-140	3	30	
Benzo(k)fluoranthene	2.95	0.333	mg/kg wet	3.333		89	40-140	0.5	30	
bis(2-Chloroethoxy)methane	2.91	0.333	mg/kg wet	3.333		87	40-140	3	30	
bis(2-Chloroethyl)ether	3.14	0.333	mg/kg wet	3.333		94	40-140	3	30	
bis(2-chloroisopropyl)Ether	2.53	0.333	mg/kg wet	3.333		76	40-140	3	30	
bis(2-Ethylhexyl)phthalate	2.98	0.333	mg/kg wet	3.333		89	40-140	1	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL70110 - 3546										
Butylbenzylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140	1	30	
Chrysene	2.99	0.167	mg/kg wet	3.333		90	40-140	4	30	
Dibenzo(a,h)Anthracene	3.27	0.167	mg/kg wet	3.333		98	40-140	2	30	
Dibenzofuran	2.96	0.333	mg/kg wet	3.333		89	40-140	4	30	
Diethylphthalate	3.02	0.333	mg/kg wet	3.333		91	40-140	6	30	
Dimethylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	4	30	
Di-n-butylphthalate	3.26	0.333	mg/kg wet	3.333		98	40-140	6	30	
Di-n-octylphthalate	3.11	0.333	mg/kg wet	3.333		93	40-140	11	30	
Fluoranthene	3.37	0.333	mg/kg wet	3.333		101	40-140	15	30	
Fluorene	3.07	0.333	mg/kg wet	3.333		92	40-140	6	30	
Hexachlorobenzene	3.12	0.333	mg/kg wet	3.333		94	40-140	2	30	
Hexachlorobutadiene	3.11	0.333	mg/kg wet	3.333		93	40-140	7	30	
Hexachloroethane	2.80	0.333	mg/kg wet	3.333		84	40-140	33	30	D+
Indeno(1,2,3-cd)Pyrene	3.24	0.333	mg/kg wet	3.333		97	40-140	3	30	
Isophorone	2.68	0.333	mg/kg wet	3.333		80	40-140	3	30	
Naphthalene	2.98	0.333	mg/kg wet	3.333		90	40-140	5	30	
Nitrobenzene	3.08	0.333	mg/kg wet	3.333		92	40-140	6	30	
N-Nitrosodimethylamine	2.39	0.333	mg/kg wet	3.333		72	40-140	8	30	
Pentachlorophenol	2.87	1.67	mg/kg wet	3.333		86	30-130	2	30	
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140	4	30	
Phenol	2.73	0.333	mg/kg wet	3.333		82	30-130	0.9	30	
Pyrene	2.65	0.333	mg/kg wet	3.333		79	40-140	6	30	
Surrogate: 1,2-Dichlorobenzene-d4	*3.11*		mg/kg wet	*3.333*		*93*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*6.05*		mg/kg wet	*5.000*		*121*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*4.92*		mg/kg wet	*5.000*		*98*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.52*		mg/kg wet	*3.333*		*106*	*30-130*			
Surrogate: 2-Fluorophenol	*4.96*		mg/kg wet	*5.000*		*99*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.59*		mg/kg wet	*3.333*		*108*	*30-130*			
Surrogate: Phenol-d6	*4.89*		mg/kg wet	*5.000*		*98*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.25*		mg/kg wet	*3.333*		*98*	*30-130*			
Batch CL70412 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL70412 - 3546										
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL70412 - 3546										
Surrogate: 1,2-Dichlorobenzene-d4	*3.07*		mg/kg wet	*3.333*		*92*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*5.71*		mg/kg wet	*5.000*		*114*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*5.08*		mg/kg wet	*5.000*		*102*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.32*		mg/kg wet	*3.333*		*99*	*30-130*			
Surrogate: 2-Fluorophenol	*5.12*		mg/kg wet	*5.000*		*102*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.45*		mg/kg wet	*3.333*		*103*	*30-130*			
Surrogate: Phenol-d6	*5.30*		mg/kg wet	*5.000*		*106*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.33*		mg/kg wet	*3.333*		*100*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.88	0.333	mg/kg wet	3.333		86	40-140			
1,2-Dichlorobenzene	2.75	0.333	mg/kg wet	3.333		82	40-140			
1,3-Dichlorobenzene	2.78	0.333	mg/kg wet	3.333		83	40-140			
1,4-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
2,4,5-Trichlorophenol	3.47	0.333	mg/kg wet	3.333		104	30-130			
2,4,6-Trichlorophenol	3.28	0.333	mg/kg wet	3.333		98	30-130			
2,4-Dichlorophenol	3.06	0.333	mg/kg wet	3.333		92	30-130			
2,4-Dimethylphenol	3.04	0.333	mg/kg wet	3.333		91	30-130			
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		80	30-130			
2,4-Dinitrotoluene	3.32	0.333	mg/kg wet	3.333		100	40-140			
2,6-Dinitrotoluene	3.06	0.333	mg/kg wet	3.333		92	40-140			
2-Chloronaphthalene	2.69	0.333	mg/kg wet	3.333		81	40-140			
2-Chlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2-Methylnaphthalene	2.83	0.333	mg/kg wet	3.333		85	40-140			
2-Methylphenol	2.99	0.333	mg/kg wet	3.333		90	30-130			
2-Nitrophenol	3.03	0.333	mg/kg wet	3.333		91	30-130			
3,3´-Dichlorobenzidine	2.94	0.667	mg/kg wet	3.333		88	40-140			
3+4-Methylphenol	6.30	0.667	mg/kg wet	6.667		95	30-130			
4-Bromophenyl-phenylether	3.07	0.333	mg/kg wet	3.333		92	40-140			
4-Chloroaniline	2.79	0.667	mg/kg wet	3.333		84	40-140			
4-Nitrophenol	2.61	1.67	mg/kg wet	3.333		78	30-130			
Acenaphthene	2.84	0.333	mg/kg wet	3.333		85	40-140			
Acenaphthylene	2.95	0.333	mg/kg wet	3.333		89	40-140			
Acetophenone	3.03	0.667	mg/kg wet	3.333		91	40-140			
Aniline	3.02	1.67	mg/kg wet	3.333		91	40-140			
Anthracene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Azobenzene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(a)anthracene	3.04	0.333	mg/kg wet	3.333		91	40-140			
Benzo(a)pyrene	3.06	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	3.10	0.333	mg/kg wet	3.333		93	40-140			
Benzo(g,h,i)perylene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Benzo(k)fluoranthene	3.13	0.333	mg/kg wet	3.333		94	40-140			
bis(2-Chloroethoxy)methane	2.89	0.333	mg/kg wet	3.333		87	40-140			
bis(2-Chloroethyl)ether	3.24	0.333	mg/kg wet	3.333		97	40-140			
bis(2-chloroisopropyl)Ether	2.68	0.333	mg/kg wet	3.333		80	40-140			
bis(2-Ethylhexyl)phthalate	3.14	0.333	mg/kg wet	3.333		94	40-140			

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL70412 - 3546										
Butylbenzylphthalate	3.14	0.333	mg/kg wet	3.333		94	40-140			
Chrysene	2.96	0.167	mg/kg wet	3.333		89	40-140			
Dibenzo(a,h)Anthracene	3.09	0.167	mg/kg wet	3.333		93	40-140			
Dibenzofuran	2.97	0.333	mg/kg wet	3.333		89	40-140			
Diethylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140			
Dimethylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140			
Di-n-butylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140			
Di-n-octylphthalate	3.30	0.333	mg/kg wet	3.333		99	40-140			
Fluoranthene	3.10	0.333	mg/kg wet	3.333		93	40-140			
Fluorene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Hexachlorobenzene	3.19	0.333	mg/kg wet	3.333		96	40-140			
Hexachlorobutadiene	2.75	0.333	mg/kg wet	3.333		83	40-140			
Hexachloroethane	2.61	0.333	mg/kg wet	3.333		78	40-140			
Indeno(1,2,3-cd)Pyrene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Isophorone	2.73	0.333	mg/kg wet	3.333		82	40-140			
Naphthalene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Nitrobenzene	2.96	0.333	mg/kg wet	3.333		89	40-140			
N-Nitrosodimethylamine	2.21	0.333	mg/kg wet	3.333		66	40-140			
Pentachlorophenol	3.13	1.67	mg/kg wet	3.333		94	30-130			
Phenanthrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Phenol	3.04	0.333	mg/kg wet	3.333		91	30-130			
Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*3.00*		mg/kg wet	*3.333*		*90*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*6.20*		mg/kg wet	*5.000*		*124*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*5.20*		mg/kg wet	*5.000*		*104*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.33*		mg/kg wet	*3.333*		*100*	*30-130*			
Surrogate: 2-Fluorophenol	*5.11*		mg/kg wet	*5.000*		*102*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.41*		mg/kg wet	*3.333*		*102*	*30-130*			
Surrogate: Phenol-d6	*5.47*		mg/kg wet	*5.000*		*109*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.84*		mg/kg wet	*3.333*		*115*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.96	0.333	mg/kg wet	3.333		89	40-140	3	30	
1,2-Dichlorobenzene	2.80	0.333	mg/kg wet	3.333		84	40-140	2	30	
1,3-Dichlorobenzene	2.76	0.333	mg/kg wet	3.333		83	40-140	0.7	30	
1,4-Dichlorobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140	0.7	30	
2,4,5-Trichlorophenol	3.46	0.333	mg/kg wet	3.333		104	30-130	0.3	30	
2,4,6-Trichlorophenol	3.31	0.333	mg/kg wet	3.333		99	30-130	0.8	30	
2,4-Dichlorophenol	3.17	0.333	mg/kg wet	3.333		95	30-130	4	30	
2,4-Dimethylphenol	3.15	0.333	mg/kg wet	3.333		94	30-130	3	30	
2,4-Dinitrophenol	2.70	1.67	mg/kg wet	3.333		81	30-130	0.7	30	
2,4-Dinitrotoluene	3.26	0.333	mg/kg wet	3.333		98	40-140	2	30	
2,6-Dinitrotoluene	3.04	0.333	mg/kg wet	3.333		91	40-140	0.7	30	
2-Chloronaphthalene	2.76	0.333	mg/kg wet	3.333		83	40-140	2	30	
2-Chlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	2	30	
2-Methylnaphthalene	2.90	0.333	mg/kg wet	3.333		87	40-140	3	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL70412 - 3546										
2-Methylphenol	3.02	0.333	mg/kg wet	3.333		91	30-130	0.9	30	
2-Nitrophenol	3.19	0.333	mg/kg wet	3.333		96	30-130	5	30	
3,3´-Dichlorobenzidine	2.80	0.667	mg/kg wet	3.333		84	40-140	5	30	
3+4-Methylphenol	6.31	0.667	mg/kg wet	6.667		95	30-130	0.2	30	
4-Bromophenyl-phenylether	3.09	0.333	mg/kg wet	3.333		93	40-140	0.9	30	
4-Chloroaniline	2.95	0.667	mg/kg wet	3.333		89	40-140	6	30	
4-Nitrophenol	2.52	1.67	mg/kg wet	3.333		76	30-130	4	30	
Acenaphthene	2.89	0.333	mg/kg wet	3.333		87	40-140	2	30	
Acenaphthylene	3.00	0.333	mg/kg wet	3.333		90	40-140	1	30	
Acetophenone	3.05	0.667	mg/kg wet	3.333		91	40-140	0.8	30	
Aniline	2.99	1.67	mg/kg wet	3.333		90	40-140	1	30	
Anthracene	3.11	0.333	mg/kg wet	3.333		93	40-140	0.7	30	
Azobenzene	3.03	0.333	mg/kg wet	3.333		91	40-140	3	30	
Benzo(a)anthracene	3.03	0.333	mg/kg wet	3.333		91	40-140	0.4	30	
Benzo(a)pyrene	3.07	0.167	mg/kg wet	3.333		92	40-140	0.3	30	
Benzo(b)fluoranthene	3.14	0.333	mg/kg wet	3.333		94	40-140	1	30	
Benzo(g,h,i)perylene	3.03	0.333	mg/kg wet	3.333		91	40-140	0.3	30	
Benzo(k)fluoranthene	3.00	0.333	mg/kg wet	3.333		90	40-140	4	30	
bis(2-Chloroethoxy)methane	2.97	0.333	mg/kg wet	3.333		89	40-140	3	30	
bis(2-Chloroethyl)ether	3.25	0.333	mg/kg wet	3.333		98	40-140	0.4	30	
bis(2-chloroisopropyl)Ether	2.63	0.333	mg/kg wet	3.333		79	40-140	2	30	
bis(2-Ethylhexyl)phthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	0.4	30	
Butylbenzylphthalate	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Chrysene	2.97	0.167	mg/kg wet	3.333		89	40-140	0.2	30	
Dibenzo(a,h)Anthracene	3.12	0.167	mg/kg wet	3.333		94	40-140	0.8	30	
Dibenzofuran	3.00	0.333	mg/kg wet	3.333		90	40-140	0.9	30	
Diethylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140	2	30	
Dimethylphthalate	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Di-n-butylphthalate	3.25	0.333	mg/kg wet	3.333		97	40-140	0.6	30	
Di-n-octylphthalate	3.21	0.333	mg/kg wet	3.333		96	40-140	3	30	
Fluoranthene	3.21	0.333	mg/kg wet	3.333		96	40-140	4	30	
Fluorene	3.07	0.333	mg/kg wet	3.333		92	40-140	0.01	30	
Hexachlorobenzene	3.20	0.333	mg/kg wet	3.333		96	40-140	0.5	30	
Hexachlorobutadiene	2.87	0.333	mg/kg wet	3.333		86	40-140	4	30	
Hexachloroethane	2.63	0.333	mg/kg wet	3.333		79	40-140	0.7	30	
Indeno(1,2,3-cd)Pyrene	3.10	0.333	mg/kg wet	3.333		93	40-140	1	30	
Isophorone	2.79	0.333	mg/kg wet	3.333		84	40-140	2	30	
Naphthalene	2.97	0.333	mg/kg wet	3.333		89	40-140	4	30	
Nitrobenzene	3.06	0.333	mg/kg wet	3.333		92	40-140	3	30	
N-Nitrosodimethylamine	2.18	0.333	mg/kg wet	3.333		65	40-140	1	30	
Pentachlorophenol	3.14	1.67	mg/kg wet	3.333		94	30-130	0.4	30	
Phenanthrene	3.01	0.333	mg/kg wet	3.333		90	40-140	0.6	30	
Phenol	3.04	0.333	mg/kg wet	3.333		91	30-130	0.01	30	
Pyrene	3.02	0.333	mg/kg wet	3.333		91	40-140	3	30	
Surrogate: 1,2-Dichlorobenzene-d4	*3.07*		mg/kg wet	*3.333*		*92*	*30-130*			

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Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL70412 - 3546										
Surrogate: 2,4,6-Tribromophenol	*6.19*		mg/kg wet	*5.000*		*124*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*5.24*		mg/kg wet	*5.000*		*105*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.44*		mg/kg wet	*3.333*		*103*	*30-130*			
Surrogate: 2-Fluorophenol	*5.22*		mg/kg wet	*5.000*		*104*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.54*		mg/kg wet	*3.333*		*106*	*30-130*			
Surrogate: Phenol-d6	*5.56*		mg/kg wet	*5.000*		*111*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.72*		mg/kg wet	*3.333*		*112*	*30-130*			
Classical Chemistry										
Batch CL70541 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	200	mg/kg							
Total Organic Carbon (2)	ND	200	mg/kg							
Total Organic Carbon (Average)	ND	200	mg/kg dry wt							
LCS										
Total Organic Carbon (1)	11500	200	mg/kg	10000		115	80-120			
Total Organic Carbon (2)	11600	200	mg/kg	10000		116	80-120			
Total Organic Carbon (Average)	11600	200	mg/kg dry wt							
LCS Dup										
Total Organic Carbon (1)	11300	200	mg/kg	10000		113	80-120	2	200	
Total Organic Carbon (2)	11500	200	mg/kg	10000		115	80-120	0.8	200	
Total Organic Carbon (Average)	11400	200	mg/kg dry wt							
Reference										
Total Organic Carbon (Average)	1.60		mg/kg dry wt							
Batch CL70737 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	200	mg/kg							
Total Organic Carbon (2)	ND	200	mg/kg							
Total Organic Carbon (Average)	ND	200	mg/kg dry wt							
LCS										
Total Organic Carbon (1)	11300	200	mg/kg	10000		113	80-120			
Total Organic Carbon (2)	11300	200	mg/kg	10000		113	80-120			
Total Organic Carbon (Average)	11300	200	mg/kg dry wt							
LCS Dup										
Total Organic Carbon (1)	11400	200	mg/kg	10000		114	80-120	1	200	
Total Organic Carbon (2)	11400	200	mg/kg	10000		114	80-120	0.5	200	
Total Organic Carbon (Average)	11400	200	mg/kg dry wt							
Reference										
Total Organic Carbon (Average)	1.70		mg/kg dry wt							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711796

Notes and Definitions

Z-09	ND
Z-08	See Attached
XH	Peaks found in the retention time window for MCPP did not confirm by GC/MS.
X*	RSD >25% between replicate analysis, samples non-homogeneous.
U	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
S-	Surrogate recovery(ies) below lower control limit (S-).
RRF	Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration
Q	Calibration required quadratic regression (Q).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
B-	Blank Spike recovery is below lower control limit (B-).
#	Modified result
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
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Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Prepared Date:

December 18, 2017

Report Information:

Pace Project #: 10412990
Sample Receipt Date: 12/02/2017
Client Project #: 1711796
Client Sub PO #: B02407
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:

Joanne Richardson

December 18, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

Report of Laboratory Analysis

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The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on ten samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report. This report was revised to provide results from the re-extraction and re-analysis of sample 1711796-09.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 35-94%. Except for two low values, which were flagged "R" on the results tables, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blanks to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batches using clean reference matrix or sample matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 79-121% with relative percent differences of 0.1-12.2%. These results were within the target ranges for the method.

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Pace Analytical Services, Inc.
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Tel: 612-607-1700
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Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Report No.....10412990

Appendix A

Sample Management

10412990

ESS Laboratory PACE

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1711796

Turn Time Standard Other **DUE 12/9/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other

Is this project for any of the following:(please circle)

MA-MCP Navy USACE CT DEP Other_____

Electonic Deliverables ***Excel** Access ***PDF**

Co. Name: **ESS Laboratory**	Project #:	Project Name: **1711796**	
Contact Person: **Shawn Morrell**	Proj. Location:		
Address: **ext 3083**	City , State:	Zip:	PO #: B02407
Tel.	email: smorrell@thielsch.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: Dioxin EPA 8290
	11/30/17	1345	G	S	1711796-01	1	1	AG	001	X
	11/30/17	1348	G	S	1711796-02	1	1	AG	002	X
	11/30/17	1351	G	S	1711796-03	1	1	AG	003	X
	11/30/17	1354	G	S	1711796-04	1	1	AG	004	X
	11/30/17	1357	G	S	1711796-05	1	1	AG	005	X
	11/30/17	1410	G	S	1711796-06	1	1	AG	006	X
	11/30/17	1413	G	S	1711796-07	1	1	AG	007	X
	11/30/17	1417	G	S	1711796-08	1	1	AG	008	X
	11/30/17	1400	G	S	1711796-09	1	1	AG	009	X
	11/30/17	1405	G	S	1711796-10	1	1	AG	010	X

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
12/1/17 1551	UPS		
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
	Fax Express 12/2/17 10:25		

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

Temp = 4.9

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 30Aug2017 Page 1 of 2
	Document No.: **F-MN-L-213-rev.21**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: ESS Laboratory

Project #: WO#:10412990

10412990

Courier: ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 12037 497 44 4681 5576

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 4.8 **Cooler Temp Corrected (°C):** 4.9 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 12/2/17 - JDD

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☑ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Joanne Richardson **Date:** 12-4-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
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Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-01		
Lab Sample ID	10412990001		
Filename	U171209A_06		
Injected By	BAL		
Total Amount Extracted	10.8 g	Matrix	Solid
% Moisture	3.4	Dilution	NA
Dry Weight Extracted	10.4 g	Collected	11/30/2017 13:45
ICAL ID	U171107	Received	12/02/2017 09:00
CCal Filename(s)	U171208B_17 & U171209A_17	Extracted	12/04/2017 14:40
Method Blank ID	BLANK-58998	Analyzed	12/09/2017 15:49

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	56
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	55
				1,2,3,7,8-PeCDF-13C	2.00	53
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	53
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	53
				1,2,3,4,7,8-HxCDF-13C	2.00	59
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	57
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	61
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	48
				1,2,3,4,7,8-HxCDD-13C	2.00	53
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	54
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	50
				1,2,3,4,7,8,9-HpCDF-13C	2.00	47
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	53
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	39 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	55
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-02			
Lab Sample ID	10412990002			
Filename	U171209A_07			
Injected By	BAL			
Total Amount Extracted	11.9 g	Matrix	Solid	
% Moisture	3.4	Dilution	NA	
Dry Weight Extracted	11.5 g	Collected	11/30/2017	13:48
ICAL ID	U171107	Received	12/02/2017	09:00
CCal Filename(s)	U171208B_17 & U171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58998	Analyzed	12/09/2017	16:34

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	66
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	65
				1,2,3,7,8-PeCDF-13C	2.00	64
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	63
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	65
				1,2,3,4,7,8-HxCDF-13C	2.00	69
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	69
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	64
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	58
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	59
				1,2,3,4,7,8,9-HpCDF-13C	2.00	54
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	62
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	49
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	65
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Tel: 612-607-1700
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-03			
Lab Sample ID	10412990003			
Filename	U171209A_08			
Injected By	BAL			
Total Amount Extracted	10.8 g	Matrix	Solid	
% Moisture	3.3	Dilution	NA	
Dry Weight Extracted	10.4 g	Collected	11/30/2017	13:51
ICAL ID	U171107	Received	12/02/2017	09:00
CCal Filename(s)	U171208B_17 & U171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58998	Analyzed	12/09/2017	17:18

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	54
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	51
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	54
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	52
				1,2,3,4,7,8-HxCDF-13C	2.00	73
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	72
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	53
				1,2,3,4,7,8-HxCDD-13C	2.00	66
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	59
				1,2,3,4,7,8,9-HpCDF-13C	2.00	50
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	62
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	47
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	50
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Tel: 612-607-1700
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-04			
Lab Sample ID	10412990004			
Filename	U171209A_09			
Injected By	BAL			
Total Amount Extracted	10.8 g	Matrix	Solid	
% Moisture	3.1	Dilution	NA	
Dry Weight Extracted	10.5 g	Collected	11/30/2017	13:54
ICAL ID	U171107	Received	12/02/2017	09:00
CCal Filename(s)	U171208B_17 & U171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58998	Analyzed	12/09/2017	18:03

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	72
				1,2,3,7,8-PeCDF-13C	2.00	71
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	70
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	74
				1,2,3,4,7,8-HxCDF-13C	2.00	79
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	68
				1,2,3,4,7,8-HxCDD-13C	2.00	75
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	67
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	62
				1,2,3,4,7,8,9-HpCDF-13C	2.00	56
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	68
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	50
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	74
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-05			
Lab Sample ID	10412990005			
Filename	U171209A_10			
Injected By	BAL			
Total Amount Extracted	11.3 g	Matrix	Solid	
% Moisture	3.9	Dilution	NA	
Dry Weight Extracted	10.9 g	Collected	11/30/2017	13:57
ICAL ID	U171107	Received	12/02/2017	09:00
CCal Filename(s)	U171208B_17 & U171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58998	Analyzed	12/09/2017	18:48

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	61
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	57
				1,2,3,7,8-PeCDF-13C	2.00	59
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	60
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	60
				1,2,3,4,7,8-HxCDF-13C	2.00	71
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	69
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	71
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	56
				1,2,3,4,7,8-HxCDD-13C	2.00	66
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	60
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	55
				1,2,3,4,7,8,9-HpCDF-13C	2.00	47
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	58
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	44
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	59
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-06			
Lab Sample ID	10412990006			
Filename	U171209A_11			
Injected By	BAL			
Total Amount Extracted	10.9 g	Matrix	Solid	
% Moisture	17.5	Dilution	NA	
Dry Weight Extracted	8.99 g	Collected	11/30/2017	14:10
ICAL ID	U171107	Received	12/02/2017	09:00
CCal Filename(s)	U171208B_17 & U171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58998	Analyzed	12/09/2017	19:33

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	66
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	58
				1,2,3,7,8-PeCDF-13C	2.00	58
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	63
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	58
				1,2,3,4,7,8-HxCDF-13C	2.00	91
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	94
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	90
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	57
				1,2,3,4,7,8-HxCDD-13C	2.00	84
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	85
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	71
				1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	69
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	44
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	58
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-07			
Lab Sample ID	10412990007			
Filename	U171209A_12			
Injected By	BAL			
Total Amount Extracted	10.6 g	Matrix	Solid	
% Moisture	14.7	Dilution	NA	
Dry Weight Extracted	9.04 g	Collected	11/30/2017	14:13
ICAL ID	U171107	Received	12/02/2017	09:00
CCal Filename(s)	U171208B_17 & U171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58998	Analyzed	12/09/2017	20:18

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	62
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	60
				1,2,3,7,8-PeCDF-13C	2.00	60
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	59
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	61
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	64
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	65
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	61
				1,2,3,4,7,8-HxCDD-13C	2.00	59
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	53
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	54
				1,2,3,4,7,8,9-HpCDF-13C	2.00	44
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	44
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	57
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-08			
Lab Sample ID	10412990008			
Filename	U171209A_13			
Injected By	BAL			
Total Amount Extracted	10.8 g	Matrix	Solid	
% Moisture	14.0	Dilution	NA	
Dry Weight Extracted	9.29 g	Collected	11/30/2017	14:17
ICAL ID	U171107	Received	12/02/2017	09:00
CCal Filename(s)	U171208B_17 & U171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58998	Analyzed	12/09/2017	21:02

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	70
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	70
				1,2,3,7,8-PeCDF-13C	2.00	71
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	69
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	71
				1,2,3,4,7,8-HxCDF-13C	2.00	75
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	76
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	70
				1,2,3,4,7,8-HxCDD-13C	2.00	74
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	65
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	59
				1,2,3,4,7,8,9-HpCDF-13C	2.00	57
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	48
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	72
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-09			
Lab Sample ID	10412990009-R			
Filename	U171216B_09			
Injected By	BAL			
Total Amount Extracted	12.0 g	Matrix	Solid	
% Moisture	15.6	Dilution	NA	
Dry Weight Extracted	10.1 g	Collected	11/30/2017	14:00
ICAL ID	U171107	Received	12/02/2017	09:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/16/2017	20:00

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	56
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	55
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	53
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	54
				1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	76
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	56
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	70
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	47
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	35 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	59
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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R = Recovery outside target range

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1711796-10			
Lab Sample ID	10412990010			
Filename	U171209A_15			
Injected By	BAL			
Total Amount Extracted	11.0 g	Matrix	Solid	
% Moisture	14.6	Dilution	NA	
Dry Weight Extracted	9.39 g	Collected	11/30/2017	14:05
ICAL ID	U171107	Received	12/02/2017	09:00
CCal Filename(s)	U171208B_17 & U171209A_17	Extracted	12/04/2017	14:40
Method Blank ID	BLANK-58998	Analyzed	12/09/2017	22:31

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	64
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	55
				1,2,3,7,8-PeCDF-13C	2.00	57
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	58
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	59
				1,2,3,4,7,8-HxCDF-13C	2.00	87
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	90
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	58
				1,2,3,4,7,8-HxCDD-13C	2.00	78
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	78
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	70
				1,2,3,4,7,8,9-HpCDF-13C	2.00	53
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	70
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	46
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	55
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

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NA = Not Applicable
NC = Not Calculated

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Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-58998	Matrix	Solid
Filename	U171208A_08	Dilution	NA
Total Amount Extracted	11.0 g	Extracted	12/04/2017 14:40
ICAL ID	U171107	Analyzed	12/08/2017 15:54
CCal Filename(s)	U171208A_01 & U171208A_17	Injected By	ZMS

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	66
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	65
				1,2,3,7,8-PeCDF-13C	2.00	68
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	66
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	68
				1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	69
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	71
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	68
				1,2,3,4,7,8-HxCDD-13C	2.00	68
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	61
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	62
				1,2,3,4,7,8,9-HpCDF-13C	2.00	62
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	71
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	53
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	66
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

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Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-59101	Matrix	Solid
Filename	U171216B_07	Dilution	NA
Total Amount Extracted	10.0 g	Extracted	12/13/2017 14:50
ICAL ID	U171107	Analyzed	12/16/2017 18:33
CCal Filename(s)	U171216B_03 & U171216B_19	Injected By	BAL

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	53
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	52
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	54
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	56
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	71
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	55
				1,2,3,4,7,8-HxCDD-13C	2.00	62
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	52
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	62
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	41
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-58999		
Filename	Y171207A_10	Matrix	Solid
Total Amount Extracted	10.4 g	Dilution	NA
ICAL ID	Y171107	Extracted	12/04/2017 14:40
CCal Filename(s)	Y171207A_05 & Y171207A_19	Analyzed	12/07/2017 20:38
Method Blank ID	BLANK-58998	Injected By	

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.18	89	2,3,7,8-TCDF-13C	2.0	72
Total TCDF				2,3,7,8-TCDD-13C	2.0	63
				1,2,3,7,8-PeCDF-13C	2.0	76
2,3,7,8-TCDD	0.20	0.19	96	2,3,4,7,8-PeCDF-13C	2.0	82
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	84
				1,2,3,4,7,8-HxCDF-13C	2.0	76
1,2,3,7,8-PeCDF	1.0	0.93	93	1,2,3,6,7,8-HxCDF-13C	2.0	70
2,3,4,7,8-PeCDF	1.0	0.81	81	2,3,4,6,7,8-HxCDF-13C	2.0	79
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	72
				1,2,3,4,7,8-HxCDD-13C	2.0	72
1,2,3,7,8-PeCDD	1.0	0.85	85	1,2,3,6,7,8-HxCDD-13C	2.0	57
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	57
				1,2,3,4,7,8,9-HpCDF-13C	2.0	60
1,2,3,4,7,8-HxCDF	1.0	0.91	91	1,2,3,4,6,7,8-HpCDD-13C	2.0	62
1,2,3,6,7,8-HxCDF	1.0	0.86	86	OCDD-13C	4.0	62
2,3,4,6,7,8-HxCDF	1.0	0.79	79			
1,2,3,7,8,9-HxCDF	1.0	0.85	85	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	0.91	91	2,3,7,8-TCDD-37Cl4	0.20	67
1,2,3,6,7,8-HxCDD	1.0	0.93	93			
1,2,3,7,8,9-HxCDD	1.0	0.86	86			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.87	87			
1,2,3,4,7,8,9-HpCDF	1.0	0.86	86			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.79	79			
Total HpCDD						
OCDF	2.0	1.8	90			
OCDD	2.0	1.8	89			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-59102		
Filename	U171216B_06	Matrix	Solid
Total Amount Extracted	10.6 g	Dilution	NA
ICAL ID	U171107	Extracted	12/13/2017 14:50
CCal Filename(s)	U171216B_03 & U171216B_19	Analyzed	12/16/2017 17:49
Method Blank ID	BLANK-59101	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.18	91	2,3,7,8-TCDF-13C	2.0	59
Total TCDF				2,3,7,8-TCDD-13C	2.0	57
				1,2,3,7,8-PeCDF-13C	2.0	56
2,3,7,8-TCDD	0.20	0.19	93	2,3,4,7,8-PeCDF-13C	2.0	57
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	60
				1,2,3,4,7,8-HxCDF-13C	2.0	70
1,2,3,7,8-PeCDF	1.0	0.95	95	1,2,3,6,7,8-HxCDF-13C	2.0	79
2,3,4,7,8-PeCDF	1.0	0.86	86	2,3,4,6,7,8-HxCDF-13C	2.0	81
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	64
				1,2,3,4,7,8-HxCDD-13C	2.0	68
1,2,3,7,8-PeCDD	1.0	0.87	87	1,2,3,6,7,8-HxCDD-13C	2.0	73
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	66
				1,2,3,4,7,8,9-HpCDF-13C	2.0	54
1,2,3,4,7,8-HxCDF	1.0	0.94	94	1,2,3,4,6,7,8-HpCDD-13C	2.0	64
1,2,3,6,7,8-HxCDF	1.0	0.88	88	OCDD-13C	4.0	44
2,3,4,6,7,8-HxCDF	1.0	0.84	84			
1,2,3,7,8,9-HxCDF	1.0	0.85	85	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	1.0	100	2,3,7,8-TCDD-37Cl4	0.20	59
1,2,3,6,7,8-HxCDD	1.0	0.98	98			
1,2,3,7,8,9-HxCDD	1.0	0.95	95			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.94	94			
1,2,3,4,7,8,9-HpCDF	1.0	0.93	93			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.85	85			
Total HpCDD						
OCDF	2.0	2.0	100			
OCDD	2.0	1.9	94			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Spiked Sample Report

Client - ESS Laboratory

Client's Sample ID	1711796-01-MS		
Lab Sample ID	10412990001-MS		
Filename	U171209A_03	Matrix	Solid
Total Amount Extracted	11.2 g	Dilution	NA
ICAL ID	U171107	Extracted	12/04/2017 14:40
CCal Filename(s)	U171208B_17 & U171209A_17	Analyzed	12/09/2017 13:35
Method Blank ID	BLANK-58998	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.23	116	2,3,7,8-TCDF-13C	2.00	57
				2,3,7,8-TCDD-13C	2.00	53
				1,2,3,7,8-PeCDF-13C	2.00	56
2,3,7,8-TCDD	0.20	0.23	114	2,3,4,7,8-PeCDF-13C	2.00	57
				1,2,3,7,8-PeCDD-13C	2.00	57
				1,2,3,4,7,8-HxCDF-13C	2.00	64
1,2,3,7,8-PeCDF	1.00	1.15	115	1,2,3,6,7,8-HxCDF-13C	2.00	62
2,3,4,7,8-PeCDF	1.00	1.04	104	2,3,4,6,7,8-HxCDF-13C	2.00	63
				1,2,3,7,8,9-HxCDF-13C	2.00	54
				1,2,3,4,7,8-HxCDD-13C	2.00	57
1,2,3,7,8-PeCDD	1.00	1.05	105	1,2,3,6,7,8-HxCDD-13C	2.00	59
				1,2,3,4,6,7,8-HpCDF-13C	2.00	53
				1,2,3,4,7,8,9-HpCDF-13C	2.00	48
1,2,3,4,7,8-HxCDF	1.00	1.10	110	1,2,3,4,6,7,8-HpCDD-13C	2.00	60
1,2,3,6,7,8-HxCDF	1.00	1.03	103	OCDD-13C	4.00	48
2,3,4,6,7,8-HxCDF	1.00	1.04	104			
1,2,3,7,8,9-HxCDF	1.00	1.06	106	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.21	121	2,3,7,8-TCDD-37Cl4	0.20	58
1,2,3,6,7,8-HxCDD	1.00	1.11	111			
1,2,3,7,8,9-HxCDD	1.00	1.05	105			
1,2,3,4,6,7,8-HpCDF	1.00	1.12	112			
1,2,3,4,7,8,9-HpCDF	1.00	1.10	110			
1,2,3,4,6,7,8-HpCDD	1.00	1.01	101			
OCDF	2.00	2.29	114			
OCDD	2.00	2.28	114			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Spiked Sample Report

Client - ESS Laboratory

Client's Sample ID	1711796-01-MSD		
Lab Sample ID	10412990001-MSD		
Filename	U171209A_04	Matrix	Solid
Total Amount Extracted	11.1 g	Dilution	NA
ICAL ID	U171107	Extracted	12/04/2017 14:40
CCal Filename(s)	U171208B_17 & U171209A_17	Analyzed	12/09/2017 14:19
Method Blank ID	BLANK-58998	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.23	117	2,3,7,8-TCDF-13C	2.00	54
				2,3,7,8-TCDD-13C	2.00	53
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	0.20	0.23	114	2,3,4,7,8-PeCDF-13C	2.00	53
				1,2,3,7,8-PeCDD-13C	2.00	53
				1,2,3,4,7,8-HxCDF-13C	2.00	58
1,2,3,7,8-PeCDF	1.00	1.16	116	1,2,3,6,7,8-HxCDF-13C	2.00	58
2,3,4,7,8-PeCDF	1.00	1.03	103	2,3,4,6,7,8-HxCDF-13C	2.00	58
				1,2,3,7,8,9-HxCDF-13C	2.00	48
				1,2,3,4,7,8-HxCDD-13C	2.00	57
1,2,3,7,8-PeCDD	1.00	1.05	105	1,2,3,6,7,8-HxCDD-13C	2.00	50
				1,2,3,4,6,7,8-HpCDF-13C	2.00	47
				1,2,3,4,7,8,9-HpCDF-13C	2.00	43
1,2,3,4,7,8-HxCDF	1.00	1.06	106	1,2,3,4,6,7,8-HpCDD-13C	2.00	52
1,2,3,6,7,8-HxCDF	1.00	1.05	105	OCDD-13C	4.00	41
2,3,4,6,7,8-HxCDF	1.00	1.03	103			
1,2,3,7,8,9-HxCDF	1.00	1.08	108	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.07	107	2,3,7,8-TCDD-37Cl4	0.20	53
1,2,3,6,7,8-HxCDD	1.00	1.18	118			
1,2,3,7,8,9-HxCDD	1.00	1.04	104			
1,2,3,4,6,7,8-HpCDF	1.00	1.15	115			
1,2,3,4,7,8,9-HpCDF	1.00	1.11	111			
1,2,3,4,6,7,8-HpCDD	1.00	1.02	102			
OCDF	2.00	2.26	113			
OCDD	2.00	2.26	113			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Spike Sample Results

Client - ESS Laboratory

Client Sample ID	1711796-01			Dry Weights	
Lab Sample ID	10412990001	Sample Filename	U171209A_06	Sample Amount	10.4 g
MS ID	10412990001-MS	MS Filename	U171209A_03	MS Amount	10.8 g
MSD ID	10412990001-MSD	MSD Filename	U171209A_04	MSD Amount	10.7 g

Analyte	Sample Conc. ng/Kg	MS/MSD Qs (ng)	MS Qm (ng)	MSD Qm (ng)	RPD	Background Subtracted MS % Rec.	MSD % Rec.	RPD
2,3,7,8-TCDF	0.000	0.20	0.23	0.23	0.8	116	117	0.8
2,3,7,8-TCDD	0.000	0.20	0.23	0.23	0.1	114	114	0.1
1,2,3,7,8-PeCDF	0.000	1.00	1.15	1.16	0.8	115	116	0.8
2,3,4,7,8-PeCDF	0.000	1.00	1.04	1.03	0.2	104	103	0.2
1,2,3,7,8-PeCDD	0.000	1.00	1.05	1.05	0.6	105	105	0.6
1,2,3,4,7,8-HxCDF	0.000	1.00	1.10	1.06	2.9	110	106	2.9
1,2,3,6,7,8-HxCDF	0.000	1.00	1.03	1.05	1.1	103	105	1.1
2,3,4,6,7,8-HxCDF	0.000	1.00	1.04	1.03	1.1	104	103	1.1
1,2,3,7,8,9-HxCDF	0.000	1.00	1.06	1.08	2.4	106	108	2.4
1,2,3,4,7,8-HxCDD	0.000	1.00	1.21	1.07	12.2	121	107	12.2
1,2,3,6,7,8-HxCDD	0.000	1.00	1.11	1.18	5.7	111	118	5.7
1,2,3,7,8,9-HxCDD	0.000	1.00	1.05	1.04	0.8	105	104	0.8
1,2,3,4,6,7,8-HpCDF	0.000	1.00	1.12	1.15	2.7	112	115	2.7
1,2,3,4,7,8,9-HpCDF	0.000	1.00	1.10	1.11	0.8	110	111	0.8
1,2,3,4,6,7,8-HpCDD	0.000	1.00	1.01	1.02	1.0	101	102	1.0
OCDF	0.000	2.00	2.29	2.26	1.0	114	113	1.0
OCDD	0.000	2.00	2.28	2.26	1.2	113	112	1.2

Definitions

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711796
Date Received: 11/30/2017
Project Due Date: 12/7/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? No
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 08 – 10
    Analysis: DIOXIN
    TAT: 5 D
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
    b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

Added -08, -09, -10 per ML w ~~[illegible]~~ 12/1/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	186493	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	186512	Yes	NA	Yes	VOA Vial - Other	Other	
01	186513	Yes	NA	Yes	VOA Vial - Other	Other	
01	186550	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	186551	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
01	186552	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	186553	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	186492	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	186510	Yes	NA	Yes	VOA Vial - Other	Other	
02	186511	Yes	NA	Yes	VOA Vial - Other	Other	
02	186546	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	186547	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
02	186548	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	186549	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	186491	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	186508	Yes	NA	Yes	VOA Vial - Other	Other	
03	186509	Yes	NA	Yes	VOA Vial - Other	Other	
03	186542	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	186543	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
03	186544	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	186545	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	186490	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	186506	Yes	NA	Yes	VOA Vial - Other	Other	
04	186507	Yes	NA	Yes	VOA Vial - Other	Other	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711796
Date Received: 11/30/2017

04	186538	Yes	NA	Yes	4 oz. Jar - Unpres	NP
04	186539	Yes	NA	Yes	2 oz. Jar - Unpres	NP
04	186540	Yes	NA	Yes	8 oz. Jar - Unpres	NP
04	186541	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	186489	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	186504	Yes	NA	Yes	VOA Vial - Other	Other
05	186505	Yes	NA	Yes	VOA Vial - Other	Other
05	186534	Yes	NA	Yes	4 oz. Jar - Unpres	NP
05	186535	Yes	NA	Yes	2 oz. Jar - Unpres	NP
05	186536	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	186537	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	186488	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	186502	Yes	NA	Yes	VOA Vial - Other	Other
06	186503	Yes	NA	Yes	VOA Vial - Other	Other
06	186530	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	186531	Yes	NA	Yes	2 oz. Jar - Unpres	NP
06	186532	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	186533	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	186487	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	186500	Yes	NA	Yes	VOA Vial - Other	Other
07	186501	Yes	NA	Yes	VOA Vial - Other	Other
07	186526	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	186527	Yes	NA	Yes	2 oz. Jar - Unpres	NP
07	186528	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	186529	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	186680	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	186681	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	186684	Yes	NA	Yes	4 oz. Jar - Unpres	NP
08	186687	Yes	NA	Yes	2 oz. Jar - Unpres	NP
08	186690	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	186695	Yes	NA	Yes	VOA Vial - Other	Other
08	186696	Yes	NA	Yes	VOA Vial - Other	Other
09	186678	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	186679	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	186683	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	186686	Yes	NA	Yes	2 oz. Jar - Unpres	NP
09	186689	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	186693	Yes	NA	Yes	VOA Vial - Other	Other
09	186694	Yes	NA	Yes	VOA Vial - Other	Other
10	186676	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	186677	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	186682	Yes	NA	Yes	4 oz. Jar - Unpres	NP
10	186685	Yes	NA	Yes	2 oz. Jar - Unpres	NP
10	186688	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	186691	Yes	NA	Yes	VOA Vial - Other	Other
10	186692	Yes	NA	Yes	VOA Vial - Other	Other

2nd Review
Are barcode labels on correct containers? Yes No

Completed By: _____ Date & Time: 12/1/17 1400

Reviewed By: _____ Date & Time: 12/1/17 1520

Delivered By: _____ 12/1/17 1520

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711796
Date Received: 11/30/2017
Project Due Date: 12/7/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? No
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: **1 through 7**
    Analysis: **Dioxins 8290**
    TAT: **STD**
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 11/30/17 Time: 1453 By: EL

Sample Receiving Notes:

Did not receive: A-Capping sand-015, A-capping sand-016,A-capping sand-017 11/30/17

Rec'd: C-06,C-07,C-08-not listed on COC

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Katherine Mason Date: 12/1/17 Time: 1022 By: ML

Devon Wilton provided a revised COC on 12/1/17. Project updated accordingly.

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	186493	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	186512	Yes	NA	Yes	VOA Vial - Other	Other	
01	186513	Yes	NA	Yes	VOA Vial - Other	Other	
01	186550	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	186551	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
01	186552	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	186553	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	186492	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	186510	Yes	NA	Yes	VOA Vial - Other	Other	
02	186511	Yes	NA	Yes	VOA Vial - Other	Other	
02	186546	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	186547	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
02	186548	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	186549	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	186491	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	186508	Yes	NA	Yes	VOA Vial - Other	Other	
03	186509	Yes	NA	Yes	VOA Vial - Other	Other	
03	186542	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	186543	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
03	186544	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	186545	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	186490	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	186506	Yes	NA	Yes	VOA Vial - Other	Other	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711796
Date Received: 11/30/2017

04	186507	Yes	NA	Yes	VOA Vial - Other	Other
04	186538	Yes	NA	Yes	4 oz. Jar - Unpres	NP
04	186539	Yes	NA	Yes	2 oz. Jar - Unpres	NP
04	186540	Yes	NA	Yes	8 oz. Jar - Unpres	NP
04	186541	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	186489	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	186504	Yes	NA	Yes	VOA Vial - Other	Other
05	186505	Yes	NA	Yes	VOA Vial - Other	Other
05	186534	Yes	NA	Yes	4 oz. Jar - Unpres	NP
05	186535	Yes	NA	Yes	2 oz. Jar - Unpres	NP
05	186536	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	186537	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	186488	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	186502	Yes	NA	Yes	VOA Vial - Other	Other
06	186503	Yes	NA	Yes	VOA Vial - Other	Other
06	186530	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	186531	Yes	NA	Yes	2 oz. Jar - Unpres	NP
06	186532	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	186533	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	186487	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	186500	Yes	NA	Yes	VOA Vial - Other	Other
07	186501	Yes	NA	Yes	VOA Vial - Other	Other
07	186526	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	186527	Yes	NA	Yes	2 oz. Jar - Unpres	NP
07	186528	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	186529	Yes	NA	Yes	8 oz. Jar - Unpres	NP

2nd Review
Are barcode labels on correct containers? Yes No

Completed By: [signature] Date & Time: 11/30/17 1930

Reviewed By: [signature] Date & Time: 11/30/17 1954

Delivered By: [signature] 11/30/17 1954

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711796
Date Received: 11/30/2017
Project Due Date: 12/7/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? No
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: **1 through 7**
    Analysis: **Dioxins 8290**
    TAT: **STD**
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 11/30/17 Time: 1453 By: EL

Sample Receiving Notes:

Did not receive: A-Capping sand-015, A-capping sand-016,A-capping sand-017 11/30/17

Rec'd: C-06,C-07,C-08-not listed on COC

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? ____ Date: ____ Time: ____ By: ____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	186493	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	186512	Yes	NA	Yes	VOA Vial - Other	Other	
01	186513	Yes	NA	Yes	VOA Vial - Other	Other	
01	186550	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	186551	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
01	186552	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	186553	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	186492	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	186510	Yes	NA	Yes	VOA Vial - Other	Other	
02	186511	Yes	NA	Yes	VOA Vial - Other	Other	
02	186546	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	186547	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
02	186548	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	186549	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	186491	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	186508	Yes	NA	Yes	VOA Vial - Other	Other	
03	186509	Yes	NA	Yes	VOA Vial - Other	Other	
03	186542	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	186543	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
03	186544	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	186545	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	186490	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	186506	Yes	NA	Yes	VOA Vial - Other	Other	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711796
Date Received: 11/30/2017

04	186507	Yes	NA	Yes	VOA Vial - Other	Other
04	186538	Yes	NA	Yes	4 oz. Jar - Unpres	NP
04	186539	Yes	NA	Yes	2 oz. Jar - Unpres	NP
04	186540	Yes	NA	Yes	8 oz. Jar - Unpres	NP
04	186541	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	186489	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	186504	Yes	NA	Yes	VOA Vial - Other	Other
05	186505	Yes	NA	Yes	VOA Vial - Other	Other
05	186534	Yes	NA	Yes	4 oz. Jar - Unpres	NP
05	186535	Yes	NA	Yes	2 oz. Jar - Unpres	NP
05	186536	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	186537	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	186488	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	186502	Yes	NA	Yes	VOA Vial - Other	Other
06	186503	Yes	NA	Yes	VOA Vial - Other	Other
06	186530	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	186531	Yes	NA	Yes	2 oz. Jar - Unpres	NP
06	186532	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	186533	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	186487	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	186500	Yes	NA	Yes	VOA Vial - Other	Other
07	186501	Yes	NA	Yes	VOA Vial - Other	Other
07	186526	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	186527	Yes	NA	Yes	2 oz. Jar - Unpres	NP
07	186528	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	186529	Yes	NA	Yes	8 oz. Jar - Unpres	NP

2nd Review
Are barcode labels on correct containers? Yes No

Completed By: [signature] Date & Time: 11/30/17 1930

Reviewed By: [signature] Date & Time: 11/30/17 1954

Delivered By: [signature] 11/30/17 1954

Changes made 12/1/17 - ML

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1711796

Turn Time 5-Day Rush
Regulatory State
Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1
Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	11/30/17	1:45	Grab	Soil	Type A - Capping Sand - 010	X	X	X	X	X	X	X	X	X	X	X
02	11/30/17	1:48	Grab	Soil	Type A - Capping Sand - 011	X	X	X	X	X	X	X	X	X	X	X
03	11/30/17	1:51	Grab	Soil	Type A - Capping Sand - 012	X	X	X	X	X	X	X	X	X	X	X
04	11/30/17	1:54	Grab	Soil	Type A - Capping Sand - 013	X	X	X	X	X	X	X	X	X	X	X
05	11/30/17	1:57	Grab	Soil	Type A - Capping Sand - 014	X	X	X	X	X	X	X	X	X	X	X
06	11/30/17	~~2:00~~	210 Grab	Soil	Type C ~~Type A~~ - Capping Sand - ~~015~~ 006	X	X	X	X	X	X	X	X	X	X	X
07	11/30/17	~~2:05~~	213 Grab	Soil	Type C ~~Type A~~ - Capping Sand - ~~016~~ 007	X	X	X	X	X	X	X	X	X	X	X
08	11/30/17	~~2:10~~	217 Grab	Soil	Type C ~~Type A~~ - Capping Sand - ~~017~~ 008	X	X	X	X	X	X	X	X	X	X	X
6 09	11/30/17	~~2:13~~	200 Grab	Soil	Type C - Capping Sand - 004	X	X	X	X	X	X	X	X	X	X	X
7 10	11/30/17	~~2:17~~	205 Grab	Soil	Type C - Capping Sand - 005	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
Number of Containers per Sample:

Laboratory Use Only
Cooler Present: Yes
Seals Intact: NA
Cooler Temperature: °C ice temp: 1.8

Sampled by: Aggregate Industries QC
Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11/30 2:30	11/30/17 14:32	11/30/17 17:45	11/30/17 1832
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton			

ESS Laboratory

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CHAIN OF CUSTODY

ESS Lab # 1711796

Turn Time 5-Day Rush

Regulatory State

Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1

Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216					
01	11/30/17	1:45	Grab	Soil	Type A - Capping Sand - 010	X	X	X	X	X	X	X	X	X	X	X					
02	11/30/17	1:48	Grab	Soil	Type A - Capping Sand - 011	X	X	X	X	X	X	X	X	X	X	X					
03	11/30/17	1:51	Grab	Soil	Type A - Capping Sand - 012	X	X	X	X	X	X	X	X	X	X	X					
04	11/30/17	1:54	Grab	Soil	Type A - Capping Sand - 013	X	X	X	X	X	X	X	X	X	X	X					
05	11/30/17	1:57	Grab	Soil	Type A - Capping Sand - 014	X	X	X	X	X	X	X	X	X	X	X					
06	11/30/17	2:00	Grab	Soil	Type A - Capping Sand - 015	X	X	X	X	X	X	X	X	X	X	X					
07	11/30/17	2:05	Grab	Soil	Type A - Capping Sand - 016	X	X	X	X	X	X	X	X	X	X	X					
08	11/30/17	2:10	Grab	Soil	Type A - Capping Sand - 017	X	X	X	X	X	X	X	X	X	X	X					
6 09	11/30/17	2:13	Grab	Soil	Type C - Capping Sand - 004	X	X	X	X	X	X	X	X	X	X	X					
7 10	11/30/17	2:17	Grab	Soil	Type C - Capping Sand - 005	X	X	X	X	X	X	X	X	X	X	X					

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: Yes

Seals Intact: NA

Cooler Temperature: °C ice temp: 1.8

Sampled by : Aggregate Industries QC

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11/30 2:30	11/30/17 14:32	11/30/17 17:45	11/30/17 1832
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton			

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1712171

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:22 pm, Dec 21, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses

CTS - Cranston, RI	Grain Size Analysis, Soil Classification, Water Content
Pace Analytical - Minneapolis, MN	Dioxin

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

SAMPLE RECEIPT

The following samples were received on December 11, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Low Level VOA vials were frozen by ESS Laboratory on December 7, 2017 at 15:08.

These samples were originally received on December 7, 2017.

Lab Number	Sample Name	Matrix	Analysis
1712171-01	Type A - Capping Sand - 015	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712171-02	Type A - Capping Sand - 016	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712171-03	Type A - Capping Sand - 017	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712171-04	Type A - Capping Sand - 018	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712171-05	Type A - Capping Sand - 019	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712171-06	Type C - Capping Sand - 009	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712171-07	Type C - Capping Sand - 010	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712171-08	Type C - Capping Sand - 011	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712171-09	Type C - Capping Sand - 012	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712171-10	Type C - Capping Sand - 013	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1712171

1712171-11	Trip Blank	Solid	8260B Low

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712171

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

C7L0188-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
1,4-Dioxane (23% @ 20%), 2-Hexanone (26% @ 20%), 4-Methyl-2-Pentanone (24% @ 20%), Dichlorodifluoromethane (25% @ 20%), Naphthalene (28% @ 20%), sec-Butylbenzene (28% @ 20%), Tetrahydrofuran (33% @ 20%)

8081B Organochlorine Pesticides

CL71351-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Aldrin (38% @ 30%), Aldrin [2C] (38% @ 30%), Methoxychlor (43% @ 30%), Methoxychlor [2C] (46% @ 30%)

8151A Chlorinated Herbicides

1712171-06 **Modified result**
MCPP [2C]
1712171-06 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**
1712171-07 **Modified result**
MCPP [2C]
1712171-07 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**
1712171-08 **Modified result**
MCPP [2C]
1712171-08 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

8270D Semi-Volatile Organic Compounds

C7L0179-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (101% @ 80-120%)
C7L0179-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (129% @ 80-120%), Pentachlorophenol (112% @ 80-120%)
C7L0179-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4-Dinitrophenol (29% @ 20%)
C7L0179-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
N-Nitrosodimethylamine (27% @ 20%)
C7L0183-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (97% @ 80-120%), 2,6-Dinitrotoluene (97% @ 80-120%)
C7L0183-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (86% @ 80-120%), Pentachlorophenol (87% @ 80-120%)
C7L0183-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (21% @ 20%), N-Nitrosodimethylamine (30% @ 20%), Pyridine (22% @ 20%)
C7L0184-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (82% @ 80-120%), Pentachlorophenol (76% @ 80-120%)
C7L0184-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Aniline (24% @ 20%)
C7L0184-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1712171

N-Nitrosodimethylamine (36% @ 20%), Pentachlorophenol (24% @ 20%), Pyridine (36% @ 20%)

C7L0184-CCV1 **Surrogate recovery(ies) above upper control limit (S+).**
2-Fluorophenol (124% @ 80-120%)

C7L0200-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (101% @ 80-120%)

C7L0200-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (93% @ 80-120%), Pentachlorophenol (98% @ 80-120%)

C7L0200-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (21% @ 20%), N-Nitrosodimethylamine (22% @ 20%), Pyridine (23% @ 20%)

C7L0225-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (90% @ 80-120%), 2,6-Dinitrotoluene (93% @ 80-120%)

C7L0225-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (110% @ 80-120%), Pentachlorophenol (100% @ 80-120%)

C7L0225-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4-Nitrophenol (22% @ 20%), N-Nitrosodimethylamine (31% @ 20%)

Total Metals

CL71225-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Barium (22% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1712171-01 through 1712171-11**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

(X) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	(X) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	( ) MassDEP EPH CAM IV B	(X) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes (X) No ( )*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard
Date: December 21, 2017
Printed Name: Laurel Stoddard
Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.42)		6020A		20	NAR	12/13/17 21:27	2.49	100	CL71225
Arsenic	**2.57** (2.09)		6010C		1	KJK	12/16/17 1:56	2.49	100	CL71225
Barium	**3.69** (2.09)		6010C		1	KJK	12/14/17 23:14	2.49	100	CL71225
Beryllium	**0.45** (0.09)		6010C		1	KJK	12/14/17 23:14	2.49	100	CL71225
Cadmium	ND (0.42)		6010C		1	KJK	12/14/17 23:14	2.49	100	CL71225
Chromium	**0.89** (0.84)		6010C		1	KJK	12/14/17 23:14	2.49	100	CL71225
Lead	**5.20** (4.18)		6010C		1	KJK	12/14/17 23:14	2.49	100	CL71225
Mercury	ND (0.026)		7471B		1	MJV	12/13/17 14:25	0.8	40	CL71226
Nickel	ND (2.09)		6010C		1	KJK	12/14/17 23:14	2.49	100	CL71225
Selenium	ND (0.42)		6020A		20	NAR	12/13/17 21:27	2.49	100	CL71225
Silver	ND (0.42)		6010C		1	KJK	12/14/17 23:14	2.49	100	CL71225
Thallium	ND (0.42)		6020A		20	NAR	12/13/17 21:27	2.49	100	CL71225
Vanadium	ND (0.84)		6010C		1	KJK	12/14/17 23:14	2.49	100	CL71225
Zinc	**7.65** (2.09)		6010C		1	KJK	12/14/17 23:14	2.49	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
1,4-Dioxane	ND (0.0867)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
2-Butanone	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
2-Chlorotoluene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
2-Hexanone	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
4-Chlorotoluene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Acetone	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Benzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Bromobenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Bromochloromethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Bromoform	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Bromomethane	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Carbon Disulfide	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Chlorobenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Chloroethane	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Chloroform	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Chloromethane	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Dibromomethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Diethyl Ether	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Di-isopropyl ether	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Ethylbenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Isopropylbenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Methylene Chloride	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Naphthalene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
n-Butylbenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
n-Propylbenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
sec-Butylbenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Styrene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
tert-Butylbenzene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Tetrachloroethene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Tetrahydrofuran	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Toluene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Trichloroethene	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Vinyl Chloride	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Xylene O	ND (0.0043)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Xylene P,M	ND (0.0087)		8260B Low		1	12/13/17 17:34	C7L0188	CL71319
Xylenes (Total)	ND (0.0087)		8260B Low		1	12/13/17 17:34		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*118 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*100 %*		*70-130*
Surrogate: Dibromofluoromethane	*113 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/11/17 17:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
4,4´-DDE	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
4,4´-DDT	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Aldrin	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
alpha-BHC	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
alpha-Chlordane	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
beta-BHC	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Chlordane (Total)	ND (0.0213)		8081B		1	12/14/17 16:44	C7L0182	CL71351
delta-BHC	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Dieldrin	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Endosulfan I	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Endosulfan II	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Endosulfan Sulfate	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Endrin	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Endrin Ketone	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/14/17 16:44	C7L0182	CL71351
gamma-Chlordane	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Heptachlor	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Heptachlor Epoxide	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Hexachlorobenzene	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351
Methoxychlor	ND (0.0027)		8081B		1	12/14/17 16:44	C7L0182	CL71351

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 16:55

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 15:30		CL71113
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 15:30		CL71113
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 15:30		CL71113
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 15:30		CL71113
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 15:30		CL71113
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 15:30		CL71113
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 15:30		CL71113
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 15:30		CL71113
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 15:30		CL71113

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*94 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 20:08	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 20:08	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/20/17 20:08	C7L0310	CL71832
2,4-DB	ND (0.048)		8151A		1	12/20/17 20:08	C7L0310	CL71832
Dalapon	ND (0.046)		8151A		1	12/20/17 20:08	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/20/17 20:08	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/20/17 20:08	C7L0310	CL71832
Dinoseb	ND (0.048)		8151A		1	12/20/17 20:08	C7L0310	CL71832
MCPA	ND (2.37)		8151A		1	12/20/17 20:08	C7L0310	CL71832
MCPP	ND (2.40)		8151A		1	12/20/17 20:08	C7L0310	CL71832

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*59 %*		*30-150*
Surrogate: DCAA [2C]	*62 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
1,2-Dichlorobenzene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
1,3-Dichlorobenzene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
1,4-Dichlorobenzene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2,4,5-Trichlorophenol	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2,4,6-Trichlorophenol	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2,4-Dichlorophenol	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2,4-Dimethylphenol	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2,4-Dinitrophenol	ND (1.68)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2,4-Dinitrotoluene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2,6-Dinitrotoluene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2-Chloronaphthalene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2-Chlorophenol	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2-Methylnaphthalene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2-Methylphenol	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
2-Nitrophenol	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
3,3′-Dichlorobenzidine	ND (0.671)		8270D		1	12/14/17 0:47	C7L0184	CL71119
3+4-Methylphenol	ND (0.671)		8270D		1	12/14/17 0:47	C7L0184	CL71119
4-Bromophenyl-phenylether	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
4-Chloroaniline	ND (0.671)		8270D		1	12/14/17 0:47	C7L0184	CL71119
4-Nitrophenol	ND (1.68)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Acenaphthene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Acenaphthylene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Acetophenone	ND (0.671)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Aniline	ND (1.68)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Anthracene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Azobenzene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Benzo(a)anthracene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Benzo(a)pyrene	ND (0.168)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Benzo(b)fluoranthene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Benzo(g,h,i)perylene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Benzo(k)fluoranthene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
bis(2-Chloroethyl)ether	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
bis(2-chloroisopropyl)Ether	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
bis(2-Ethylhexyl)phthalate	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Butylbenzylphthalate	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Chrysene	ND (0.168)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Dibenzo(a,h)Anthracene	ND (0.168)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Dibenzofuran	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Diethylphthalate	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Dimethylphthalate	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Di-n-butylphthalate	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Di-n-octylphthalate	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Fluoranthene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Fluorene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Hexachlorobenzene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Hexachlorobutadiene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Hexachloroethane	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Indeno(1,2,3-cd)Pyrene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Isophorone	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Naphthalene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Nitrobenzene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
N-Nitrosodimethylamine	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Pentachlorophenol	ND (1.68)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Phenanthrene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Phenol	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119
Pyrene	ND (0.335)		8270D		1	12/14/17 0:47	C7L0184	CL71119

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*81 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*77 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*85 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*79 %*		*30-130*				
Surrogate: Phenol-d6		*83 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*81 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	**252** (73.7)		9060		1	DEL	12/15/17 18:20	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.45)		6020A		20	NAR	12/13/17 22:08	2.33	100	CL71225
Arsenic	**2.61** (2.23)		6010C		1	KJK	12/16/17 2:16	2.33	100	CL71225
Barium	**2.61** (2.23)		6010C		1	KJK	12/14/17 23:46	2.33	100	CL71225
Beryllium	**0.42** (0.10)		6010C		1	KJK	12/14/17 23:46	2.33	100	CL71225
Cadmium	ND (0.45)		6010C		1	KJK	12/14/17 23:46	2.33	100	CL71225
Chromium	**7.38** (0.89)		6010C		1	KJK	12/14/17 23:46	2.33	100	CL71225
Lead	**4.93** (4.47)		6010C		1	KJK	12/14/17 23:46	2.33	100	CL71225
Mercury	ND (0.030)		7471B		1	MJV	12/13/17 14:39	0.68	40	CL71226
Nickel	**4.26** (2.23)		6010C		1	KJK	12/14/17 23:46	2.33	100	CL71225
Selenium	ND (0.45)		6020A		20	NAR	12/14/17 15:57	2.33	100	CL71225
Silver	ND (0.45)		6010C		1	KJK	12/14/17 23:46	2.33	100	CL71225
Thallium	ND (0.45)		6020A		20	NAR	12/13/17 22:08	2.33	100	CL71225
Vanadium	**1.86** (0.89)		6010C		1	KJK	12/14/17 23:46	2.33	100	CL71225
Zinc	**15.5** (2.23)		6010C		1	KJK	12/14/17 23:46	2.33	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
1,4-Dioxane	ND (0.0897)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
2-Butanone	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
2-Chlorotoluene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
2-Hexanone	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
4-Chlorotoluene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Acetone	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Benzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Bromobenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Bromochloromethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Bromoform	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Bromomethane	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Carbon Disulfide	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Chlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Chloroethane	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Chloroform	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Chloromethane	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Dibromomethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Diethyl Ether	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Di-isopropyl ether	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Ethylbenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Isopropylbenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Methylene Chloride	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Naphthalene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
n-Butylbenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
n-Propylbenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
sec-Butylbenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Styrene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
tert-Butylbenzene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Tetrachloroethene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Tetrahydrofuran	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Toluene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Trichloroethene	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Vinyl Chloride	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Xylene O	ND (0.0045)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Xylene P,M	ND (0.0090)		8260B Low		1	12/13/17 18:00	C7L0188	CL71319
Xylenes (Total)	ND (0.0090)		8260B Low		1	12/13/17 18:00		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*117 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*112 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 19.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/11/17 17:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
4,4´-DDE	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
4,4´-DDT	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Aldrin	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
alpha-BHC	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
alpha-Chlordane	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
beta-BHC	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Chlordane (Total)	ND (0.0209)		8081B		1	12/14/17 17:14	C7L0182	CL71351
delta-BHC	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Dieldrin	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Endosulfan I	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Endosulfan II	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Endrin	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Endrin Ketone	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/14/17 17:14	C7L0182	CL71351
gamma-Chlordane	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Heptachlor	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Hexachlorobenzene	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351
Methoxychlor	ND (0.0026)		8081B		1	12/14/17 17:14	C7L0182	CL71351

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*95 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*63 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 20.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 13:33		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 13:33		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 13:33		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 13:33		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 13:33		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 13:33		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 13:33		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 13:33		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 13:33		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*84 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 20:39	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 20:39	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/20/17 20:39	C7L0310	CL71832
2,4-DB	ND (0.048)		8151A		1	12/20/17 20:39	C7L0310	CL71832
Dalapon	ND (0.046)		8151A		1	12/20/17 20:39	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/20/17 20:39	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/20/17 20:39	C7L0310	CL71832
Dinoseb	ND (0.048)		8151A		1	12/20/17 20:39	C7L0310	CL71832
MCPA	ND (2.37)		8151A		1	12/20/17 20:39	C7L0310	CL71832
MCPP	ND (2.40)		8151A		1	12/20/17 20:39	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*59 %*		*30-150*
Surrogate: DCAA [2C]	*62 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
1,2-Dichlorobenzene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
1,3-Dichlorobenzene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
1,4-Dichlorobenzene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2,4,5-Trichlorophenol	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2,4,6-Trichlorophenol	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2,4-Dichlorophenol	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2,4-Dimethylphenol	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2,4-Dinitrophenol	ND (1.70)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2,4-Dinitrotoluene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2,6-Dinitrotoluene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2-Chloronaphthalene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2-Chlorophenol	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2-Methylnaphthalene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2-Methylphenol	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
2-Nitrophenol	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
3,3′-Dichlorobenzidine	ND (0.680)		8270D		1	12/13/17 18:38	C7L0200	CL71119
3+4-Methylphenol	ND (0.680)		8270D		1	12/13/17 18:38	C7L0200	CL71119
4-Bromophenyl-phenylether	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
4-Chloroaniline	ND (0.680)		8270D		1	12/13/17 18:38	C7L0200	CL71119
4-Nitrophenol	ND (1.70)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Acenaphthene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Acenaphthylene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Acetophenone	ND (0.680)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Aniline	ND (1.70)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Anthracene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Azobenzene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Benzo(a)anthracene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Benzo(a)pyrene	ND (0.170)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Benzo(b)fluoranthene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Benzo(g,h,i)perylene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Benzo(k)fluoranthene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
bis(2-Chloroethyl)ether	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
bis(2-chloroisopropyl)Ether	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
bis(2-Ethylhexyl)phthalate	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Butylbenzylphthalate	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Chrysene	ND (0.170)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Dibenzo(a,h)Anthracene	ND (0.170)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Dibenzofuran	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Diethylphthalate	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Dimethylphthalate	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Di-n-butylphthalate	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Di-n-octylphthalate	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Fluoranthene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Fluorene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Hexachlorobenzene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Hexachlorobutadiene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Hexachloroethane	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Indeno(1,2,3-cd)Pyrene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Isophorone	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Naphthalene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Nitrobenzene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
N-Nitrosodimethylamine	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Pentachlorophenol	ND (1.70)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Phenanthrene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Phenol	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119
Pyrene	ND (0.340)		8270D		1	12/13/17 18:38	C7L0200	CL71119

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*68 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*73 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*69 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*63 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*71 %*		*30-130*				
Surrogate: Phenol-d6		*65 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*89 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (92.8)		9060		1	DEL	12/15/17 19:10	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.32)		6020A		20	NAR	12/13/17 22:14	3.23	100	CL71225
Arsenic	ND (3.21)		6010C		2	KJK	12/16/17 2:21	3.23	100	CL71225
Barium	ND (3.21)		6010C		2	KJK	12/16/17 2:21	3.23	100	CL71225
Beryllium	**0.48** (0.14)		6010C		2	KJK	12/16/17 2:21	3.23	100	CL71225
Cadmium	ND (0.64)		6010C		2	KJK	12/16/17 2:21	3.23	100	CL71225
Chromium	ND (1.28)		6010C		2	KJK	12/16/17 2:21	3.23	100	CL71225
Lead	ND (6.42)		6010C		2	KJK	12/16/17 17:05	3.23	100	CL71225
Mercury	ND (0.028)		7471B		1	MJV	12/13/17 14:41	0.74	40	CL71226
Nickel	ND (3.21)		6010C		2	KJK	12/16/17 2:21	3.23	100	CL71225
Selenium	ND (0.32)		6020A		20	NAR	12/14/17 16:02	3.23	100	CL71225
Silver	ND (0.64)		6010C		2	KJK	12/16/17 2:21	3.23	100	CL71225
Thallium	ND (0.32)		6020A		20	NAR	12/13/17 22:14	3.23	100	CL71225
Vanadium	ND (1.28)		6010C		2	KJK	12/16/17 2:21	3.23	100	CL71225
Zinc	**7.43** (3.21)		6010C		2	KJK	12/16/17 17:05	3.23	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
1,4-Dioxane	ND (0.0978)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
2-Butanone	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
2-Chlorotoluene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
2-Hexanone	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
4-Chlorotoluene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Acetone	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Benzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Bromobenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Bromochloromethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Bromoform	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Bromomethane	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Carbon Disulfide	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Chlorobenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Chloroethane	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Chloroform	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Chloromethane	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Dibromochloromethane	ND (0.0020)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Dibromomethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Diethyl Ether	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Di-isopropyl ether	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Ethylbenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Isopropylbenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Methylene Chloride	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Naphthalene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
n-Butylbenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
n-Propylbenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
sec-Butylbenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Styrene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
tert-Butylbenzene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Tetrachloroethene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Tetrahydrofuran	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Toluene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Trichloroethene	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Vinyl Chloride	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Xylene O	ND (0.0049)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Xylene P,M	ND (0.0098)		8260B Low		1	12/13/17 18:25	C7L0188	CL71319
Xylenes (Total)	ND (0.0098)		8260B Low		1	12/13/17 18:25		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*118 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*113 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/11/17 17:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
4,4´-DDE	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
4,4´-DDT	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Aldrin	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
alpha-BHC	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
alpha-Chlordane	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
beta-BHC	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Chlordane (Total)	ND (0.0216)		8081B		1	12/14/17 17:43	C7L0182	CL71351
delta-BHC	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Dieldrin	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Endosulfan I	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Endosulfan II	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Endosulfan Sulfate	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Endrin	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Endrin Ketone	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/14/17 17:43	C7L0182	CL71351
gamma-Chlordane	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Heptachlor	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Heptachlor Epoxide	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Hexachlorobenzene	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351
Methoxychlor	ND (0.0027)		8081B		1	12/14/17 17:43	C7L0182	CL71351

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*99 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 13:51		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 13:51		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 13:51		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 13:51		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 13:51		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 13:51		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 13:51		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 13:51		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 13:51		CL71114

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*93 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*90 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 21:11	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 21:11	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/20/17 21:11	C7L0310	CL71832
2,4-DB	ND (0.048)		8151A		1	12/20/17 21:11	C7L0310	CL71832
Dalapon	ND (0.046)		8151A		1	12/20/17 21:11	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/20/17 21:11	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/20/17 21:11	C7L0310	CL71832
Dinoseb	ND (0.048)		8151A		1	12/20/17 21:11	C7L0310	CL71832
MCPA	ND (2.36)		8151A		1	12/20/17 21:11	C7L0310	CL71832
MCPP	ND (2.39)		8151A		1	12/20/17 21:11	C7L0310	CL71832

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*63 %*		*30-150*
Surrogate: DCAA [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
1,2-Dichlorobenzene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
1,3-Dichlorobenzene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
1,4-Dichlorobenzene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2,4,5-Trichlorophenol	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2,4,6-Trichlorophenol	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2,4-Dichlorophenol	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2,4-Dimethylphenol	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2,4-Dinitrophenol	ND (1.85)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2,4-Dinitrotoluene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2,6-Dinitrotoluene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2-Chloronaphthalene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2-Chlorophenol	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2-Methylnaphthalene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2-Methylphenol	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
2-Nitrophenol	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
3,3′-Dichlorobenzidine	ND (0.741)		8270D		1	12/14/17 21:10	C7L0225	CL71119
3+4-Methylphenol	ND (0.741)		8270D		1	12/14/17 21:10	C7L0225	CL71119
4-Bromophenyl-phenylether	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
4-Chloroaniline	ND (0.741)		8270D		1	12/14/17 21:10	C7L0225	CL71119
4-Nitrophenol	ND (1.85)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Acenaphthene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Acenaphthylene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Acetophenone	ND (0.741)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Aniline	ND (1.85)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Anthracene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Azobenzene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Benzo(a)anthracene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Benzo(a)pyrene	ND (0.185)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Benzo(b)fluoranthene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Benzo(g,h,i)perylene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Benzo(k)fluoranthene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
bis(2-Chloroethyl)ether	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
bis(2-chloroisopropyl)Ether	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
bis(2-Ethylhexyl)phthalate	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Butylbenzylphthalate	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Chrysene	ND (0.185)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Dibenzo(a,h)Anthracene	ND (0.185)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Dibenzofuran	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Diethylphthalate	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Dimethylphthalate	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Di-n-butylphthalate	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Di-n-octylphthalate	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Fluoranthene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Fluorene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Hexachlorobenzene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Hexachlorobutadiene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Hexachloroethane	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Indeno(1,2,3-cd)Pyrene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Isophorone	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Naphthalene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Nitrobenzene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
N-Nitrosodimethylamine	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Pentachlorophenol	ND (1.85)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Phenanthrene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Phenol	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119
Pyrene	ND (0.370)		8270D		1	12/14/17 21:10	C7L0225	CL71119

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*68 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*82 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*75 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*61 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*72 %*		*30-130*				
Surrogate: Phenol-d6		*67 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*96 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (84.0)		9060		1	DEL	12/15/17 19:31	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.39)		6020A		20	NAR	12/13/17 22:20	2.66	100	CL71225
Arsenic	ND (1.95)		6010C		1	KJK	12/16/17 2:25	2.66	100	CL71225
Barium	**2.30** (1.95)		6010C		1	KJK	12/14/17 23:55	2.66	100	CL71225
Beryllium	**0.47** (0.09)		6010C		1	KJK	12/14/17 23:55	2.66	100	CL71225
Cadmium	ND (0.39)		6010C		1	KJK	12/14/17 23:55	2.66	100	CL71225
Chromium	ND (0.78)		6010C		1	KJK	12/14/17 23:55	2.66	100	CL71225
Lead	**5.52** (3.90)		6010C		1	KJK	12/14/17 23:55	2.66	100	CL71225
Mercury	ND (0.021)		7471B		1	MJV	12/13/17 14:43	0.99	40	CL71226
Nickel	ND (1.95)		6010C		1	KJK	12/14/17 23:55	2.66	100	CL71225
Selenium	ND (0.39)		6020A		20	NAR	12/14/17 16:08	2.66	100	CL71225
Silver	ND (0.39)		6010C		1	KJK	12/14/17 23:55	2.66	100	CL71225
Thallium	ND (0.39)		6020A		20	NAR	12/13/17 22:20	2.66	100	CL71225
Vanadium	ND (0.78)		6010C		1	KJK	12/14/17 23:55	2.66	100	CL71225
Zinc	**8.16** (1.95)		6010C		1	KJK	12/14/17 23:55	2.66	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
1,4-Dioxane	ND (0.0836)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
2-Butanone	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
2-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
2-Hexanone	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
4-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Acetone	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Benzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Bromobenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Bromochloromethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Bromoform	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Bromomethane	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Carbon Disulfide	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Chlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Chloroethane	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Chloroform	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Chloromethane	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Dibromomethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Diethyl Ether	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Di-isopropyl ether	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Ethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Isopropylbenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Methylene Chloride	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Naphthalene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
n-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
n-Propylbenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
sec-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Styrene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
tert-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Tetrachloroethene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Tetrahydrofuran	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Toluene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Trichloroethene	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Vinyl Chloride	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Xylene O	ND (0.0042)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Xylene P,M	ND (0.0084)		8260B Low		1	12/13/17 18:50	C7L0188	CL71319
Xylenes (Total)	ND (0.0084)		8260B Low		1	12/13/17 18:50		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*123 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*115 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/11/17 17:15

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
4,4´-DDE	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
4,4´-DDT	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Aldrin	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
alpha-BHC	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
alpha-Chlordane	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
beta-BHC	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Chlordane (Total)	ND (0.0212)		8081B		1	12/14/17 18:13	C7L0182	CL71351
delta-BHC	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Dieldrin	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Endosulfan I	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Endosulfan II	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Endrin	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Endrin Ketone	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/14/17 18:13	C7L0182	CL71351
gamma-Chlordane	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Heptachlor	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Hexachlorobenzene	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351
Methoxychlor	ND (0.0026)		8081B		1	12/14/17 18:13	C7L0182	CL71351

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*99 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*71 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 14:10		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 14:10		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 14:10		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 14:10		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 14:10		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 14:10		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 14:10		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 14:10		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 14:10		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*102 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*93 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 21:43	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 21:43	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/20/17 21:43	C7L0310	CL71832
2,4-DB	ND (0.049)		8151A		1	12/20/17 21:43	C7L0310	CL71832
Dalapon	ND (0.047)		8151A		1	12/20/17 21:43	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/20/17 21:43	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/20/17 21:43	C7L0310	CL71832
Dinoseb	ND (0.049)		8151A		1	12/20/17 21:43	C7L0310	CL71832
MCPA	ND (2.39)		8151A		1	12/20/17 21:43	C7L0310	CL71832
MCPP	ND (2.41)		8151A		1	12/20/17 21:43	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*65 %*		*30-150*
Surrogate: DCAA [2C]	*70 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
1,2-Dichlorobenzene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
1,3-Dichlorobenzene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
1,4-Dichlorobenzene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2,4,5-Trichlorophenol	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2,4,6-Trichlorophenol	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2,4-Dichlorophenol	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2,4-Dimethylphenol	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2,4-Dinitrophenol	ND (1.80)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2,4-Dinitrotoluene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2,6-Dinitrotoluene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2-Chloronaphthalene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2-Chlorophenol	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2-Methylnaphthalene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2-Methylphenol	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
2-Nitrophenol	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
3,3′-Dichlorobenzidine	ND (0.721)		8270D		1	12/14/17 21:44	C7L0225	CL71119
3+4-Methylphenol	ND (0.721)		8270D		1	12/14/17 21:44	C7L0225	CL71119
4-Bromophenyl-phenylether	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
4-Chloroaniline	ND (0.721)		8270D		1	12/14/17 21:44	C7L0225	CL71119
4-Nitrophenol	ND (1.80)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Acenaphthene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Acenaphthylene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Acetophenone	ND (0.721)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Aniline	ND (1.80)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Anthracene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Azobenzene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Benzo(a)anthracene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Benzo(a)pyrene	ND (0.180)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Benzo(b)fluoranthene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Benzo(g,h,i)perylene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Benzo(k)fluoranthene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
bis(2-Chloroethyl)ether	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
bis(2-chloroisopropyl)Ether	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
bis(2-Ethylhexyl)phthalate	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Butylbenzylphthalate	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Chrysene	ND (0.180)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Dibenzo(a,h)Anthracene	ND (0.180)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Dibenzofuran	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Diethylphthalate	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Dimethylphthalate	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Di-n-butylphthalate	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Di-n-octylphthalate	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Fluoranthene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Fluorene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Hexachlorobenzene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Hexachlorobutadiene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Hexachloroethane	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Indeno(1,2,3-cd)Pyrene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Isophorone	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Naphthalene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Nitrobenzene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
N-Nitrosodimethylamine	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Pentachlorophenol	ND (1.80)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Phenanthrene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Phenol	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119
Pyrene	ND (0.360)		8270D		1	12/14/17 21:44	C7L0225	CL71119

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*70 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*85 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*62 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*73 %*		*30-130*				
Surrogate: Phenol-d6		*65 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*97 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	**84.2** (66.5)		9060		1	DEL	12/15/17 20:26	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.33)		6020A		20	NAR	12/13/17 22:26	3.17	100	CL71225
Arsenic	ND (1.63)		6010C		1	KJK	12/16/17 2:41	3.17	100	CL71225
Barium	**2.33** (1.63)		6010C		1	KJK	12/14/17 23:59	3.17	100	CL71225
Beryllium	**0.43** (0.07)		6010C		1	KJK	12/14/17 23:59	3.17	100	CL71225
Cadmium	ND (0.33)		6010C		1	KJK	12/14/17 23:59	3.17	100	CL71225
Chromium	**1.00** (0.65)		6010C		1	KJK	12/14/17 23:59	3.17	100	CL71225
Lead	**5.30** (3.26)		6010C		1	KJK	12/14/17 23:59	3.17	100	CL71225
Mercury	ND (0.023)		7471B		1	MJV	12/13/17 14:45	0.88	40	CL71226
Nickel	ND (1.63)		6010C		1	KJK	12/14/17 23:59	3.17	100	CL71225
Selenium	ND (0.33)		6020A		20	NAR	12/14/17 16:14	3.17	100	CL71225
Silver	ND (0.33)		6010C		1	KJK	12/14/17 23:59	3.17	100	CL71225
Thallium	ND (0.33)		6020A		20	NAR	12/13/17 22:26	3.17	100	CL71225
Vanadium	ND (0.65)		6010C		1	KJK	12/14/17 23:59	3.17	100	CL71225
Zinc	**5.81** (1.63)		6010C		1	KJK	12/14/17 23:59	3.17	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,1,1-Trichloroethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,1,2,2-Tetrachloroethane	ND (0.0021)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,1,2-Trichloroethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,1-Dichloroethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,1-Dichloroethene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,1-Dichloropropene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,2,3-Trichlorobenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,2,3-Trichloropropane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,2,4-Trichlorobenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,2,4-Trimethylbenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,2-Dibromo-3-Chloropropane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,2-Dibromoethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,2-Dichlorobenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,2-Dichloroethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,2-Dichloropropane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,3,5-Trimethylbenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,3-Dichlorobenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,3-Dichloropropane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,4-Dichlorobenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
1,4-Dioxane	ND (0.103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
2,2-Dichloropropane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
2-Butanone	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
2-Chlorotoluene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
2-Hexanone	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
4-Chlorotoluene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
4-Isopropyltoluene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
4-Methyl-2-Pentanone	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Acetone	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Benzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Bromobenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Bromochloromethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Bromoform	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Bromomethane	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Carbon Disulfide	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Carbon Tetrachloride	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Chlorobenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Chloroethane	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Chloroform	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Chloromethane	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
cis-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
cis-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Dibromochloromethane	ND (0.0021)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Dibromomethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Dichlorodifluoromethane	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Diethyl Ether	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Di-isopropyl ether	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Ethyl tertiary-butyl ether	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Ethylbenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Hexachlorobutadiene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Isopropylbenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Methyl tert-Butyl Ether	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Methylene Chloride	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Naphthalene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
n-Butylbenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
n-Propylbenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
sec-Butylbenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Styrene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
tert-Butylbenzene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Tertiary-amyl methyl ether	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Tetrachloroethene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Tetrahydrofuran	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Toluene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
trans-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Trichloroethene	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Trichlorofluoromethane	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Vinyl Chloride	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Xylene O	ND (0.0052)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Xylene P,M	ND (0.0103)		8260B Low		1	12/14/17 15:45	C7L0221	CL71434
Xylenes (Total)	ND (0.0103)		8260B Low		1	12/14/17 15:45		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*113 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*108 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
4,4´-DDE	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
4,4´-DDT	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Aldrin	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
alpha-BHC	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
alpha-Chlordane	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
beta-BHC	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Chlordane (Total)	ND (0.0211)		8081B		1	12/14/17 22:08	C7L0182	CL71208
delta-BHC	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Dieldrin	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Endosulfan I	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Endosulfan II	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Endrin	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Endrin Ketone	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/14/17 22:08	C7L0182	CL71208
gamma-Chlordane	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Heptachlor	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Hexachlorobenzene	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208
Methoxychlor	ND (0.0026)		8081B		1	12/14/17 22:08	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*104 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*115 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*87 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 14:29		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 14:29		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 14:29		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 14:29		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 14:29		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 14:29		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 14:29		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 14:29		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 14:29		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*95 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*102 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*96 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 22:15	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 22:15	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/20/17 22:15	C7L0310	CL71832
2,4-DB	ND (0.049)		8151A		1	12/20/17 22:15	C7L0310	CL71832
Dalapon	ND (0.047)		8151A		1	12/20/17 22:15	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/20/17 22:15	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/20/17 22:15	C7L0310	CL71832
Dinoseb	ND (0.049)		8151A		1	12/20/17 22:15	C7L0310	CL71832
MCPA	ND (2.38)		8151A		1	12/20/17 22:15	C7L0310	CL71832
MCPP	ND (2.40)		8151A		1	12/20/17 22:15	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*68 %*		*30-150*
Surrogate: DCAA [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
1,2-Dichlorobenzene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
1,3-Dichlorobenzene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
1,4-Dichlorobenzene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2,4,5-Trichlorophenol	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2,4,6-Trichlorophenol	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2,4-Dichlorophenol	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2,4-Dimethylphenol	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2,4-Dinitrophenol	ND (1.63)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2,4-Dinitrotoluene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2,6-Dinitrotoluene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2-Chloronaphthalene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2-Chlorophenol	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2-Methylnaphthalene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2-Methylphenol	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
2-Nitrophenol	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
3,3′-Dichlorobenzidine	ND (0.650)		8270D		1	12/14/17 22:18	C7L0225	CL71119
3+4-Methylphenol	ND (0.650)		8270D		1	12/14/17 22:18	C7L0225	CL71119
4-Bromophenyl-phenylether	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
4-Chloroaniline	ND (0.650)		8270D		1	12/14/17 22:18	C7L0225	CL71119
4-Nitrophenol	ND (1.63)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Acenaphthene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Acenaphthylene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Acetophenone	ND (0.650)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Aniline	ND (1.63)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Anthracene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Azobenzene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Benzo(a)anthracene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Benzo(a)pyrene	ND (0.163)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Benzo(b)fluoranthene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Benzo(g,h,i)perylene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Benzo(k)fluoranthene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
bis(2-Chloroethyl)ether	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
bis(2-chloroisopropyl)Ether	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
bis(2-Ethylhexyl)phthalate	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Butylbenzylphthalate	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Chrysene	ND (0.163)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Dibenzo(a,h)Anthracene	ND (0.163)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Dibenzofuran	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Diethylphthalate	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Dimethylphthalate	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Di-n-butylphthalate	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Di-n-octylphthalate	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Fluoranthene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Fluorene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Hexachlorobenzene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Hexachlorobutadiene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Hexachloroethane	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Indeno(1,2,3-cd)Pyrene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Isophorone	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Naphthalene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Nitrobenzene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
N-Nitrosodimethylamine	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Pentachlorophenol	ND (1.63)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Phenanthrene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Phenol	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119
Pyrene	ND (0.325)		8270D		1	12/14/17 22:18	C7L0225	CL71119

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*66 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*78 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*65 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*58 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*68 %*		*30-130*				
Surrogate: Phenol-d6		*61 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*95 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	**224** (67.7)		9060		1	DEL	12/15/17 20:43	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.50)		6020A		20	NAR	12/13/17 22:32	2.19	100	CL71225
Arsenic	**11.8** (2.52)		6010C		1	KJK	12/16/17 2:45	2.19	100	CL71225
Barium	**19.5** (2.52)		6010C		1	KJK	12/15/17 0:03	2.19	100	CL71225
Beryllium	**0.37** (0.11)		6010C		1	KJK	12/15/17 0:03	2.19	100	CL71225
Cadmium	ND (0.50)		6010C		1	KJK	12/15/17 0:03	2.19	100	CL71225
Chromium	**50.0** (1.01)		6010C		1	KJK	12/15/17 0:03	2.19	100	CL71225
Lead	**36.0** (5.05)		6010C		1	KJK	12/15/17 0:03	2.19	100	CL71225
Mercury	ND (0.034)		7471B		1	MJV	12/13/17 14:47	0.65	40	CL71226
Nickel	**23.2** (2.52)		6010C		1	KJK	12/15/17 0:03	2.19	100	CL71225
Selenium	ND (0.50)		6020A		20	NAR	12/14/17 16:20	2.19	100	CL71225
Silver	ND (1.01)		6010C		1	KJK	12/15/17 0:03	2.19	100	CL71225
Thallium	**0.56** (0.50)		6020A		20	NAR	12/13/17 22:32	2.19	100	CL71225
Vanadium	**19.0** (1.01)		6010C		1	KJK	12/15/17 0:03	2.19	100	CL71225
Zinc	**34.4** (2.52)		6010C		1	KJK	12/15/17 0:03	2.19	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 11.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0010)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
1,4-Dioxane	ND (0.0477)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
2-Butanone	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
2-Chlorotoluene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
2-Hexanone	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
4-Chlorotoluene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Acetone	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Benzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Bromobenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Bromochloromethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 11.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Bromoform	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Bromomethane	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Carbon Disulfide	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Chlorobenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Chloroethane	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Chloroform	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Chloromethane	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Dibromochloromethane	ND (0.0010)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Dibromomethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Diethyl Ether	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Di-isopropyl ether	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Ethylbenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Isopropylbenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Methylene Chloride	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Naphthalene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
n-Butylbenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
n-Propylbenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
sec-Butylbenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Styrene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
tert-Butylbenzene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Tetrachloroethene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Tetrahydrofuran	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Toluene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 11.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Trichloroethene	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Vinyl Chloride	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Xylene O	ND (0.0024)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Xylene P,M	ND (0.0048)		8260B Low		1	12/13/17 19:41	C7L0188	CL71319
Xylenes (Total)	ND (0.0048)		8260B Low		1	12/13/17 19:41		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*129 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
4,4´-DDE	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
4,4´-DDT	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Aldrin	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
alpha-BHC	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
alpha-Chlordane	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
beta-BHC	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Chlordane (Total)	ND (0.0228)		8081B		1	12/14/17 23:36	C7L0182	CL71208
delta-BHC	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Dieldrin	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Endosulfan I	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Endosulfan II	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Endrin	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Endrin Ketone	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/14/17 23:36	C7L0182	CL71208
gamma-Chlordane	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Heptachlor	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Hexachlorobenzene	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208
Methoxychlor	ND (0.0028)		8081B		1	12/14/17 23:36	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*97 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/12/17 14:48		CL71114
Aroclor 1221	ND (0.06)		8082A		1	12/12/17 14:48		CL71114
Aroclor 1232	ND (0.06)		8082A		1	12/12/17 14:48		CL71114
Aroclor 1242	ND (0.06)		8082A		1	12/12/17 14:48		CL71114
Aroclor 1248	ND (0.06)		8082A		1	12/12/17 14:48		CL71114
Aroclor 1254	ND (0.06)		8082A		1	12/12/17 14:48		CL71114
Aroclor 1260	ND (0.06)		8082A		1	12/12/17 14:48		CL71114
Aroclor 1262	ND (0.06)		8082A		1	12/12/17 14:48		CL71114
Aroclor 1268	ND (0.06)		8082A		1	12/12/17 14:48		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*95 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*102 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*88 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 22:47	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 22:47	C7L0310	CL71832
2,4-D	ND (0.051)		8151A		1	12/20/17 22:47	C7L0310	CL71832
2,4-DB	ND (0.052)		8151A		1	12/20/17 22:47	C7L0310	CL71832
Dalapon	ND (0.050)		8151A		1	12/20/17 22:47	C7L0310	CL71832
Dicamba [2C]	ND (0.010)		8151A		1	12/20/17 22:47	C7L0310	CL71832
Dichlorprop	ND (0.051)		8151A		1	12/20/17 22:47	C7L0310	CL71832
Dinoseb	ND (0.052)		8151A		1	12/20/17 22:47	C7L0310	CL71832
MCPA	ND (2.55)		8151A		1	12/20/17 22:47	C7L0310	CL71832
MCPP [2C]	# ND (2.57)		8151A		1	12/20/17 22:47	C7L0310	CL71832

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*66 %*		*30-150*
Surrogate: DCAA [2C]	*93 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
1,2-Dichlorobenzene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
1,3-Dichlorobenzene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
1,4-Dichlorobenzene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2,4,5-Trichlorophenol	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2,4,6-Trichlorophenol	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2,4-Dichlorophenol	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2,4-Dimethylphenol	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2,4-Dinitrophenol	ND (1.94)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2,4-Dinitrotoluene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2,6-Dinitrotoluene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2-Chloronaphthalene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2-Chlorophenol	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2-Methylnaphthalene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2-Methylphenol	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
2-Nitrophenol	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
3,3′-Dichlorobenzidine	ND (0.774)		8270D		1	12/14/17 22:52	C7L0225	CL71119
3+4-Methylphenol	ND (0.774)		8270D		1	12/14/17 22:52	C7L0225	CL71119
4-Bromophenyl-phenylether	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
4-Chloroaniline	ND (0.774)		8270D		1	12/14/17 22:52	C7L0225	CL71119
4-Nitrophenol	ND (1.94)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Acenaphthene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Acenaphthylene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Acetophenone	ND (0.774)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Aniline	ND (1.94)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Anthracene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Azobenzene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Benzo(a)anthracene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Benzo(a)pyrene	ND (0.194)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Benzo(b)fluoranthene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Benzo(g,h,i)perylene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Benzo(k)fluoranthene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
bis(2-Chloroethyl)ether	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
bis(2-chloroisopropyl)Ether	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
bis(2-Ethylhexyl)phthalate	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Butylbenzylphthalate	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Chrysene	ND (0.194)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Dibenzo(a,h)Anthracene	ND (0.194)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Dibenzofuran	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Diethylphthalate	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Dimethylphthalate	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Di-n-butylphthalate	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Di-n-octylphthalate	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Fluoranthene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Fluorene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Hexachlorobenzene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Hexachlorobutadiene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Hexachloroethane	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Indeno(1,2,3-cd)Pyrene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Isophorone	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Naphthalene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Nitrobenzene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
N-Nitrosodimethylamine	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Pentachlorophenol	ND (1.94)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Phenanthrene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Phenol	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119
Pyrene	ND (0.386)		8270D		1	12/14/17 22:52	C7L0225	CL71119

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*53 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*68 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*53 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*61 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*47 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*56 %*		*30-130*				
Surrogate: Phenol-d6		*49 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*77 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (94.8)		9060		1	DEL	12/15/17 21:02	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.49)		6020A		20	NAR	12/13/17 22:38	2.27	100	CL71225
Arsenic	**11.2** (2.44)		6010C		1	KJK	12/16/17 2:49	2.27	100	CL71225
Barium	**27.3** (2.44)		6010C		1	KJK	12/15/17 0:07	2.27	100	CL71225
Beryllium	**0.39** (0.11)		6010C		1	KJK	12/15/17 0:07	2.27	100	CL71225
Cadmium	ND (0.49)		6010C		1	KJK	12/15/17 0:07	2.27	100	CL71225
Chromium	**59.1** (0.98)		6010C		1	KJK	12/15/17 0:07	2.27	100	CL71225
Lead	**25.8** (4.89)		6010C		1	KJK	12/15/17 0:07	2.27	100	CL71225
Mercury	ND (0.029)		7471B		1	MJV	12/13/17 14:49	0.77	40	CL71226
Nickel	**24.3** (2.44)		6010C		1	KJK	12/15/17 0:07	2.27	100	CL71225
Selenium	ND (0.49)		6020A		20	NAR	12/14/17 16:37	2.27	100	CL71225
Silver	ND (0.49)		6010C		1	KJK	12/15/17 0:07	2.27	100	CL71225
Thallium	**0.49** (0.49)		6020A		20	NAR	12/13/17 22:38	2.27	100	CL71225
Vanadium	**18.0** (0.98)		6010C		1	KJK	12/15/17 0:07	2.27	100	CL71225
Zinc	**30.2** (2.44)		6010C		1	KJK	12/15/17 0:07	2.27	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
1,4-Dioxane	ND (0.0841)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
2-Butanone	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
2-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
2-Hexanone	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
4-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Acetone	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Benzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Bromobenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Bromochloromethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Bromoform	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Bromomethane	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Carbon Disulfide	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Chlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Chloroethane	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Chloroform	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Chloromethane	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Dibromomethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Diethyl Ether	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Di-isopropyl ether	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Ethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Isopropylbenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Methylene Chloride	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Naphthalene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
n-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
n-Propylbenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
sec-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Styrene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
tert-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Tetrachloroethene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Tetrahydrofuran	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Toluene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Trichloroethene	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Vinyl Chloride	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Xylene O	ND (0.0042)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Xylene P,M	ND (0.0084)		8260B Low		1	12/13/17 20:06	C7L0188	CL71319
Xylenes (Total)	ND (0.0084)		8260B Low		1	12/13/17 20:06		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*122 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*115 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
4,4´-DDE	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
4,4´-DDT	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Aldrin	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
alpha-BHC	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
alpha-Chlordane	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
beta-BHC	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Chlordane (Total)	ND (0.0229)		8081B		1	12/15/17 0:05	C7L0182	CL71208
delta-BHC	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Dieldrin	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Endosulfan I	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Endosulfan II	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Endrin	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Endrin Ketone	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/15/17 0:05	C7L0182	CL71208
gamma-Chlordane	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Heptachlor	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Hexachlorobenzene	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208
Methoxychlor	ND (0.0029)		8081B		1	12/15/17 0:05	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*106 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/12/17 15:06		CL71114
Aroclor 1221	ND (0.06)		8082A		1	12/12/17 15:06		CL71114
Aroclor 1232	ND (0.06)		8082A		1	12/12/17 15:06		CL71114
Aroclor 1242	ND (0.06)		8082A		1	12/12/17 15:06		CL71114
Aroclor 1248	ND (0.06)		8082A		1	12/12/17 15:06		CL71114
Aroclor 1254	ND (0.06)		8082A		1	12/12/17 15:06		CL71114
Aroclor 1260	ND (0.06)		8082A		1	12/12/17 15:06		CL71114
Aroclor 1262	ND (0.06)		8082A		1	12/12/17 15:06		CL71114
Aroclor 1268	ND (0.06)		8082A		1	12/12/17 15:06		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*87 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 23:18	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 23:18	C7L0310	CL71832
2,4-D	ND (0.052)		8151A		1	12/20/17 23:18	C7L0310	CL71832
2,4-DB	ND (0.052)		8151A		1	12/20/17 23:18	C7L0310	CL71832
Dalapon	ND (0.050)		8151A		1	12/20/17 23:18	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/20/17 23:18	C7L0310	CL71832
Dichlorprop	ND (0.052)		8151A		1	12/20/17 23:18	C7L0310	CL71832
Dinoseb	ND (0.052)		8151A		1	12/20/17 23:18	C7L0310	CL71832
MCPA	ND (2.55)		8151A		1	12/20/17 23:18	C7L0310	CL71832
MCPP [2C]	# ND (2.58)		8151A		1	12/20/17 23:18	C7L0310	CL71832

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*65 %*		*30-150*
Surrogate: DCAA [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
1,2-Dichlorobenzene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
1,3-Dichlorobenzene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
1,4-Dichlorobenzene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2,4,5-Trichlorophenol	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2,4,6-Trichlorophenol	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2,4-Dichlorophenol	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2,4-Dimethylphenol	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2,4-Dinitrophenol	ND (1.92)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2,4-Dinitrotoluene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2,6-Dinitrotoluene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2-Chloronaphthalene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2-Chlorophenol	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2-Methylnaphthalene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2-Methylphenol	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
2-Nitrophenol	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
3,3′-Dichlorobenzidine	ND (0.766)		8270D		1	12/14/17 23:26	C7L0225	CL71119
3+4-Methylphenol	ND (0.766)		8270D		1	12/14/17 23:26	C7L0225	CL71119
4-Bromophenyl-phenylether	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
4-Chloroaniline	ND (0.766)		8270D		1	12/14/17 23:26	C7L0225	CL71119
4-Nitrophenol	ND (1.92)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Acenaphthene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Acenaphthylene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Acetophenone	ND (0.766)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Aniline	ND (1.92)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Anthracene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Azobenzene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Benzo(a)anthracene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Benzo(a)pyrene	ND (0.192)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Benzo(b)fluoranthene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Benzo(g,h,i)perylene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Benzo(k)fluoranthene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
bis(2-Chloroethyl)ether	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
bis(2-chloroisopropyl)Ether	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
bis(2-Ethylhexyl)phthalate	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Butylbenzylphthalate	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Chrysene	ND (0.192)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Dibenzo(a,h)Anthracene	ND (0.192)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Dibenzofuran	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Diethylphthalate	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Dimethylphthalate	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Di-n-butylphthalate	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Di-n-octylphthalate	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Fluoranthene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Fluorene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Hexachlorobenzene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Hexachlorobutadiene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Hexachloroethane	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Indeno(1,2,3-cd)Pyrene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Isophorone	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Naphthalene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Nitrobenzene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
N-Nitrosodimethylamine	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Pentachlorophenol	ND (1.92)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Phenanthrene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Phenol	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119
Pyrene	ND (0.382)		8270D		1	12/14/17 23:26	C7L0225	CL71119

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*79 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*68 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*60 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*70 %*		*30-130*				
Surrogate: Phenol-d6		*62 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*97 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	**140** (75.5)		9060		1	DEL	12/15/17 21:26	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.47)		6020A		20	NAR	12/13/17 22:43	2.38	100	CL71225
Arsenic	**9.92** (2.33)		6010C		1	KJK	12/16/17 2:53	2.38	100	CL71225
Barium	**22.3** (2.33)		6010C		1	KJK	12/15/17 0:11	2.38	100	CL71225
Beryllium	**0.37** (0.10)		6010C		1	KJK	12/15/17 0:11	2.38	100	CL71225
Cadmium	ND (0.47)		6010C		1	KJK	12/15/17 0:11	2.38	100	CL71225
Chromium	**49.6** (0.93)		6010C		1	KJK	12/15/17 0:11	2.38	100	CL71225
Lead	**24.5** (4.66)		6010C		1	KJK	12/15/17 0:11	2.38	100	CL71225
Mercury	ND (0.028)		7471B		1	MJV	12/13/17 14:51	0.79	40	CL71226
Nickel	**21.0** (2.33)		6010C		1	KJK	12/15/17 0:11	2.38	100	CL71225
Selenium	ND (0.47)		6020A		20	NAR	12/14/17 16:43	2.38	100	CL71225
Silver	ND (0.93)		6010C		1	KJK	12/15/17 0:11	2.38	100	CL71225
Thallium	ND (0.47)		6020A		20	NAR	12/13/17 22:43	2.38	100	CL71225
Vanadium	**17.0** (0.93)		6010C		1	KJK	12/15/17 0:11	2.38	100	CL71225
Zinc	**29.6** (2.33)		6010C		1	KJK	12/15/17 0:11	2.38	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 7.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0016)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
1,4-Dioxane	ND (0.0780)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
2-Butanone	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
2-Chlorotoluene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
2-Hexanone	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
4-Chlorotoluene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Acetone	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Benzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Bromobenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Bromochloromethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 7.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Bromoform	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Bromomethane	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Carbon Disulfide	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Chlorobenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Chloroethane	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Chloroform	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Chloromethane	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Dibromochloromethane	ND (0.0016)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Dibromomethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Diethyl Ether	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Di-isopropyl ether	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Ethylbenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Isopropylbenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Methylene Chloride	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Naphthalene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
n-Butylbenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
n-Propylbenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
sec-Butylbenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Styrene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
tert-Butylbenzene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Tetrachloroethene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Tetrahydrofuran	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Toluene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 7.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Trichloroethene	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Vinyl Chloride	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Xylene O	ND (0.0039)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Xylene P,M	ND (0.0078)		8260B Low		1	12/13/17 20:32	C7L0188	CL71319
Xylenes (Total)	ND (0.0078)		8260B Low		1	12/13/17 20:32		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*124 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*117 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
4,4´-DDE	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
4,4´-DDT	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Aldrin	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
alpha-BHC	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
alpha-Chlordane	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
beta-BHC	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Chlordane (Total)	ND (0.0228)		8081B		1	12/15/17 0:34	C7L0182	CL71208
delta-BHC	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Dieldrin	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Endosulfan I	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Endosulfan II	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Endrin	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Endrin Ketone	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/15/17 0:34	C7L0182	CL71208
gamma-Chlordane	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Heptachlor	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Hexachlorobenzene	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208
Methoxychlor	ND (0.0029)		8081B		1	12/15/17 0:34	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*98 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*71 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 15:25		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 15:25		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 15:25		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 15:25		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 15:25		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 15:25		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 15:25		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 15:25		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 15:25		CL71114

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 23:50	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 23:50	C7L0310	CL71832
2,4-D	ND (0.051)		8151A		1	12/20/17 23:50	C7L0310	CL71832
2,4-DB	ND (0.052)		8151A		1	12/20/17 23:50	C7L0310	CL71832
Dalapon	ND (0.049)		8151A		1	12/20/17 23:50	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/20/17 23:50	C7L0310	CL71832
Dichlorprop	ND (0.051)		8151A		1	12/20/17 23:50	C7L0310	CL71832
Dinoseb	ND (0.052)		8151A		1	12/20/17 23:50	C7L0310	CL71832
MCPA	ND (2.53)		8151A		1	12/20/17 23:50	C7L0310	CL71832
MCPP [2C]	# ND (2.55)		8151A		1	12/20/17 23:50	C7L0310	CL71832

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*68 %*		*30-150*
Surrogate: DCAA [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
1,2-Dichlorobenzene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
1,3-Dichlorobenzene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
1,4-Dichlorobenzene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2,4,5-Trichlorophenol	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2,4,6-Trichlorophenol	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2,4-Dichlorophenol	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2,4-Dimethylphenol	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2,4-Dinitrophenol	ND (1.94)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2,4-Dinitrotoluene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2,6-Dinitrotoluene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2-Chloronaphthalene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2-Chlorophenol	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2-Methylnaphthalene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2-Methylphenol	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
2-Nitrophenol	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
3,3′-Dichlorobenzidine	ND (0.775)		8270D		1	12/15/17 0:00	C7L0225	CL71119
3+4-Methylphenol	ND (0.775)		8270D		1	12/15/17 0:00	C7L0225	CL71119
4-Bromophenyl-phenylether	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
4-Chloroaniline	ND (0.775)		8270D		1	12/15/17 0:00	C7L0225	CL71119
4-Nitrophenol	ND (1.94)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Acenaphthene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Acenaphthylene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Acetophenone	ND (0.775)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Aniline	ND (1.94)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Anthracene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Azobenzene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Benzo(a)anthracene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Benzo(a)pyrene	ND (0.194)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Benzo(b)fluoranthene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Benzo(g,h,i)perylene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Benzo(k)fluoranthene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
bis(2-Chloroethyl)ether	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
bis(2-chloroisopropyl)Ether	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
bis(2-Ethylhexyl)phthalate	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Butylbenzylphthalate	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Chrysene	ND (0.194)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Dibenzo(a,h)Anthracene	ND (0.194)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Dibenzofuran	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Diethylphthalate	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Dimethylphthalate	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Di-n-butylphthalate	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Di-n-octylphthalate	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Fluoranthene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Fluorene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Hexachlorobenzene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Hexachlorobutadiene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Hexachloroethane	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Indeno(1,2,3-cd)Pyrene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Isophorone	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Naphthalene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Nitrobenzene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
N-Nitrosodimethylamine	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Pentachlorophenol	ND (1.94)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Phenanthrene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Phenol	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119
Pyrene	ND (0.387)		8270D		1	12/15/17 0:00	C7L0225	CL71119

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*84 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*72 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*81 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*64 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*76 %*		*30-130*				
Surrogate: Phenol-d6		*67 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*95 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (116)		9060		1	DEL	12/15/17 21:44	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.38)		6020A		20	NAR	12/13/17 22:49	2.96	100	CL71225
Arsenic	**13.4** (1.89)		6010C		1	KJK	12/16/17 2:57	2.96	100	CL71225
Barium	**25.1** (1.89)		6010C		1	KJK	12/15/17 0:15	2.96	100	CL71225
Beryllium	**0.41** (0.08)		6010C		1	KJK	12/15/17 0:15	2.96	100	CL71225
Cadmium	ND (0.38)		6010C		1	KJK	12/15/17 0:15	2.96	100	CL71225
Chromium	**52.4** (0.76)		6010C		1	KJK	12/15/17 0:15	2.96	100	CL71225
Lead	**23.1** (3.78)		6010C		1	KJK	12/15/17 0:15	2.96	100	CL71225
Mercury	ND (0.031)		7471B		1	MJV	12/13/17 14:53	0.71	40	CL71226
Nickel	**20.8** (1.89)		6010C		1	KJK	12/15/17 0:15	2.96	100	CL71225
Selenium	ND (0.38)		6020A		20	NAR	12/14/17 16:49	2.96	100	CL71225
Silver	ND (0.38)		6010C		1	KJK	12/15/17 0:15	2.96	100	CL71225
Thallium	**0.41** (0.38)		6020A		20	NAR	12/13/17 22:49	2.96	100	CL71225
Vanadium	**15.5** (0.76)		6010C		1	KJK	12/15/17 0:15	2.96	100	CL71225
Zinc	**27.1** (1.89)		6010C		1	KJK	12/15/17 0:15	2.96	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0016)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
1,4-Dioxane	ND (0.0822)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
2-Butanone	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
2-Chlorotoluene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
2-Hexanone	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
4-Chlorotoluene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Acetone	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Benzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Bromobenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Bromochloromethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Bromoform	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Bromomethane	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Carbon Disulfide	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Chlorobenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Chloroethane	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Chloroform	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Chloromethane	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Dibromochloromethane	ND (0.0016)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Dibromomethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Diethyl Ether	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Di-isopropyl ether	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Ethylbenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Isopropylbenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Methylene Chloride	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Naphthalene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
n-Butylbenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
n-Propylbenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
sec-Butylbenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Styrene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
tert-Butylbenzene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Tetrachloroethene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Tetrahydrofuran	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Toluene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Trichloroethene	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Vinyl Chloride	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Xylene O	ND (0.0041)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Xylene P,M	ND (0.0082)		8260B Low		1	12/13/17 20:57	C7L0188	CL71319
Xylenes (Total)	ND (0.0082)		8260B Low		1	12/13/17 20:57		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*123 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*116 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
4,4´-DDE	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
4,4´-DDT	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Aldrin	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
alpha-BHC	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
alpha-Chlordane	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
beta-BHC	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Chlordane (Total)	ND (0.0232)		8081B		1	12/15/17 1:04	C7L0182	CL71208
delta-BHC	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Dieldrin	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Endosulfan I	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Endosulfan II	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Endrin	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Endrin Ketone	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/15/17 1:04	C7L0182	CL71208
gamma-Chlordane	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Heptachlor	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Hexachlorobenzene	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208
Methoxychlor	ND (0.0029)		8081B		1	12/15/17 1:04	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*98 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/12/17 15:44		CL71114
Aroclor 1221	ND (0.06)		8082A		1	12/12/17 15:44		CL71114
Aroclor 1232	ND (0.06)		8082A		1	12/12/17 15:44		CL71114
Aroclor 1242	ND (0.06)		8082A		1	12/12/17 15:44		CL71114
Aroclor 1248	ND (0.06)		8082A		1	12/12/17 15:44		CL71114
Aroclor 1254	ND (0.06)		8082A		1	12/12/17 15:44		CL71114
Aroclor 1260	ND (0.06)		8082A		1	12/12/17 15:44		CL71114
Aroclor 1262	ND (0.06)		8082A		1	12/12/17 15:44		CL71114
Aroclor 1268	ND (0.06)		8082A		1	12/12/17 15:44		CL71114

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*88 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.011)		8151A		1	12/21/17 0:22	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.011)		8151A		1	12/21/17 0:22	C7L0310	CL71832
2,4-D	ND (0.052)		8151A		1	12/21/17 0:22	C7L0310	CL71832
2,4-DB	ND (0.053)		8151A		1	12/21/17 0:22	C7L0310	CL71832
Dalapon	ND (0.050)		8151A		1	12/21/17 0:22	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 0:22	C7L0310	CL71832
Dichlorprop	ND (0.052)		8151A		1	12/21/17 0:22	C7L0310	CL71832
Dinoseb	ND (0.053)		8151A		1	12/21/17 0:22	C7L0310	CL71832
MCPA	ND (2.57)		8151A		1	12/21/17 0:22	C7L0310	CL71832
MCPP	ND (2.60)		8151A		1	12/21/17 0:22	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*69 %*		*30-150*
Surrogate: DCAA [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
1,2-Dichlorobenzene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
1,3-Dichlorobenzene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
1,4-Dichlorobenzene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2,4,5-Trichlorophenol	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2,4,6-Trichlorophenol	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2,4-Dichlorophenol	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2,4-Dimethylphenol	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2,4-Dinitrophenol	ND (1.97)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2,4-Dinitrotoluene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2,6-Dinitrotoluene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2-Chloronaphthalene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2-Chlorophenol	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2-Methylnaphthalene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2-Methylphenol	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
2-Nitrophenol	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
3,3′-Dichlorobenzidine	ND (0.788)		8270D		1	12/15/17 0:34	C7L0225	CL71211
3+4-Methylphenol	ND (0.788)		8270D		1	12/15/17 0:34	C7L0225	CL71211
4-Bromophenyl-phenylether	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
4-Chloroaniline	ND (0.788)		8270D		1	12/15/17 0:34	C7L0225	CL71211
4-Nitrophenol	ND (1.97)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Acenaphthene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Acenaphthylene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Acetophenone	ND (0.788)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Aniline	ND (1.97)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Anthracene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Azobenzene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Benzo(a)anthracene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Benzo(a)pyrene	ND (0.197)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Benzo(b)fluoranthene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Benzo(g,h,i)perylene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Benzo(k)fluoranthene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
bis(2-Chloroethyl)ether	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
bis(2-chloroisopropyl)Ether	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Butylbenzylphthalate	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Chrysene	ND (0.197)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Dibenzo(a,h)Anthracene	ND (0.197)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Dibenzofuran	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Diethylphthalate	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Dimethylphthalate	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Di-n-butylphthalate	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Di-n-octylphthalate	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Fluoranthene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Fluorene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Hexachlorobenzene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Hexachlorobutadiene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Hexachloroethane	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Isophorone	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Naphthalene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Nitrobenzene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
N-Nitrosodimethylamine	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Pentachlorophenol	ND (1.97)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Phenanthrene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Phenol	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211
Pyrene	ND (0.393)		8270D		1	12/15/17 0:34	C7L0225	CL71211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*87 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*75 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*87 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*68 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*80 %*		*30-130*				
Surrogate: Phenol-d6		*68 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*96 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (91.0)		9060		1	DEL	12/15/17 22:37	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.44)		6020A		20	NAR	12/13/17 22:55	2.53	100	CL71225
Arsenic	**18.3** (2.18)		6010C		1	KJK	12/16/17 3:01	2.53	100	CL71225
Barium	**21.0** (2.18)		6010C		1	KJK	12/15/17 0:19	2.53	100	CL71225
Beryllium	**0.41** (0.10)		6010C		1	KJK	12/15/17 0:19	2.53	100	CL71225
Cadmium	ND (0.44)		6010C		1	KJK	12/15/17 0:19	2.53	100	CL71225
Chromium	**58.6** (0.87)		6010C		1	KJK	12/15/17 0:19	2.53	100	CL71225
Lead	**21.7** (4.36)		6010C		1	KJK	12/15/17 0:19	2.53	100	CL71225
Mercury	ND (0.022)		7471B		1	MJV	12/13/17 14:59	0.98	40	CL71226
Nickel	**26.1** (2.18)		6010C		1	KJK	12/15/17 0:19	2.53	100	CL71225
Selenium	ND (0.44)		6020A		20	NAR	12/14/17 16:55	2.53	100	CL71225
Silver	ND (0.87)		6010C		1	KJK	12/15/17 0:19	2.53	100	CL71225
Thallium	**0.46** (0.44)		6020A		20	NAR	12/13/17 22:55	2.53	100	CL71225
Vanadium	**16.3** (0.87)		6010C		1	KJK	12/15/17 0:19	2.53	100	CL71225
Zinc	**27.9** (2.18)		6010C		1	KJK	12/15/17 0:19	2.53	100	CL71225

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
1,4-Dioxane	ND (0.0848)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
2-Butanone	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
2-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
2-Hexanone	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
4-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Acetone	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Benzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Bromobenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Bromochloromethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Bromoform	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Bromomethane	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Carbon Disulfide	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Chlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Chloroethane	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Chloroform	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Chloromethane	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Dibromomethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Diethyl Ether	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Di-isopropyl ether	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Ethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Isopropylbenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Methylene Chloride	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Naphthalene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
n-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
n-Propylbenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
sec-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Styrene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
tert-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Tetrachloroethene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Tetrahydrofuran	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Toluene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Trichloroethene	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Vinyl Chloride	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Xylene O	ND (0.0042)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Xylene P,M	ND (0.0085)		8260B Low		1	12/13/17 21:23	C7L0188	CL71319
Xylenes (Total)	ND (0.0085)		8260B Low		1	12/13/17 21:23		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*117 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 20.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
4,4´-DDE	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
4,4´-DDT	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Aldrin	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
alpha-BHC	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
alpha-Chlordane	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
beta-BHC	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Chlordane (Total)	ND (0.0215)		8081B		1	12/15/17 1:33	C7L0182	CL71208
delta-BHC	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Dieldrin	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Endosulfan I	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Endosulfan II	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Endrin	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Endrin Ketone	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/15/17 1:33	C7L0182	CL71208
gamma-Chlordane	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Heptachlor	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Hexachlorobenzene	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208
Methoxychlor	ND (0.0027)		8081B		1	12/15/17 1:33	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*86 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*98 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 20.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 16:02		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 16:02		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 16:02		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 16:02		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 16:02		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 16:02		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 16:02		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 16:02		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 16:02		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 0:54	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 0:54	C7L0310	CL71832
2,4-D	ND (0.051)		8151A		1	12/21/17 0:54	C7L0310	CL71832
2,4-DB	ND (0.052)		8151A		1	12/21/17 0:54	C7L0310	CL71832
Dalapon	ND (0.050)		8151A		1	12/21/17 0:54	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 0:54	C7L0310	CL71832
Dichlorprop	ND (0.051)		8151A		1	12/21/17 0:54	C7L0310	CL71832
Dinoseb	ND (0.052)		8151A		1	12/21/17 0:54	C7L0310	CL71832
MCPA	ND (2.54)		8151A		1	12/21/17 0:54	C7L0310	CL71832
MCPP	ND (2.57)		8151A		1	12/21/17 0:54	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*66 %*		*30-150*
Surrogate: DCAA [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
1,2-Dichlorobenzene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
1,3-Dichlorobenzene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
1,4-Dichlorobenzene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2,4,5-Trichlorophenol	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2,4,6-Trichlorophenol	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2,4-Dichlorophenol	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2,4-Dimethylphenol	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2,4-Dinitrophenol	ND (1.93)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2,4-Dinitrotoluene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2,6-Dinitrotoluene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2-Chloronaphthalene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2-Chlorophenol	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2-Methylnaphthalene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2-Methylphenol	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
2-Nitrophenol	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
3,3′-Dichlorobenzidine	ND (0.771)		8270D		1	12/15/17 2:16	C7L0225	CL71211
3+4-Methylphenol	ND (0.771)		8270D		1	12/15/17 2:16	C7L0225	CL71211
4-Bromophenyl-phenylether	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
4-Chloroaniline	ND (0.771)		8270D		1	12/15/17 2:16	C7L0225	CL71211
4-Nitrophenol	ND (1.93)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Acenaphthene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Acenaphthylene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Acetophenone	ND (0.771)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Aniline	ND (1.93)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Anthracene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Azobenzene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Benzo(a)anthracene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Benzo(a)pyrene	ND (0.193)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Benzo(b)fluoranthene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Benzo(g,h,i)perylene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Benzo(k)fluoranthene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
bis(2-Chloroethyl)ether	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
bis(2-chloroisopropyl)Ether	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Butylbenzylphthalate	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Chrysene	ND (0.193)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Dibenzo(a,h)Anthracene	ND (0.193)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Dibenzofuran	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Diethylphthalate	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Dimethylphthalate	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Di-n-butylphthalate	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Di-n-octylphthalate	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Fluoranthene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Fluorene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Hexachlorobenzene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Hexachlorobutadiene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Hexachloroethane	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Isophorone	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Naphthalene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Nitrobenzene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
N-Nitrosodimethylamine	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Pentachlorophenol	ND (1.93)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Phenanthrene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Phenol	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211
Pyrene	ND (0.385)		8270D		1	12/15/17 2:16	C7L0225	CL71211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*86 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*102 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*86 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*99 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*77 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*90 %*		*30-130*				
Surrogate: Phenol-d6		*79 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*112 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (81.9)		9060		1	DEL	12/15/17 22:59	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
1,4-Dioxane	ND (0.100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
2-Butanone	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
2-Chlorotoluene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
2-Hexanone	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
4-Chlorotoluene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
4-Methyl-2-Pentanone	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Acetone	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Benzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Bromobenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Bromochloromethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Bromoform	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Bromomethane	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Carbon Disulfide	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Chlorobenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Chloroethane	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Chloroform	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Chloromethane	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Dibromochloromethane	ND (0.0020)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Dibromomethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Dichlorodifluoromethane	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Diethyl Ether	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Di-isopropyl ether	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Ethylbenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Isopropylbenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Methylene Chloride	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Naphthalene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
n-Butylbenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
n-Propylbenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
sec-Butylbenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Styrene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
tert-Butylbenzene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Tetrachloroethene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Tetrahydrofuran	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Toluene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Trichloroethene	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Vinyl Chloride	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Xylene O	ND (0.0050)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Xylene P,M	ND (0.0100)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215
Xylenes (Total)	ND (0.0075)		8260B Low		1	12/12/17 15:40	C7L0167	CL71215

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*111 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*108 %*		*70-130*
Surrogate: Toluene-d8	*100 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
				Total Metals						
Batch CL71225 - 3050B										
Blank										
Antimony	ND	0.50	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	0.50	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	0.50	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	55.0	4.17	mg/kg wet	48.00		115	80-120			
Arsenic	112	8.33	mg/kg wet	123.0		91	80-120			
Barium	277	8.33	mg/kg wet	253.0		109	66-134			
Beryllium	183	0.37	mg/kg wet	192.0		95	80-120			
Cadmium	205	1.67	mg/kg wet	224.0		91	80-120			
Chromium	173	3.33	mg/kg wet	179.0		97	80-120			
Lead	142	16.7	mg/kg wet	145.0		98	80-120			
Nickel	128	8.33	mg/kg wet	143.0		89	80-120			
Selenium	41.0	4.17	mg/kg wet	42.40		97	80-120			
Silver	83.1	1.67	mg/kg wet	81.60		102	80-120			
Thallium	53.5	4.17	mg/kg wet	52.00		103	80-120			
Vanadium	68.5	3.33	mg/kg wet	72.30		95	80-120			
Zinc	696	8.33	mg/kg wet	770.0		90	80-120			
LCS Dup										
Antimony	47.4	2.98	mg/kg wet	48.00		99	80-120	15	30	
Arsenic	118	5.95	mg/kg wet	123.0		96	80-120	5	20	
Barium	221	5.95	mg/kg wet	253.0		87	66-134	22	20	D+
Beryllium	189	0.26	mg/kg wet	192.0		98	80-120	3	20	
Cadmium	218	1.19	mg/kg wet	224.0		97	80-120	6	20	
Chromium	184	2.38	mg/kg wet	179.0		103	80-120	6	20	
Lead	148	11.9	mg/kg wet	145.0		102	80-120	4	20	
Nickel	133	5.95	mg/kg wet	143.0		93	80-120	4	20	
Selenium	38.9	2.98	mg/kg wet	42.40		92	80-120	5	30	
Silver	88.3	1.19	mg/kg wet	81.60		108	80-120	6	20	
Thallium	48.7	2.98	mg/kg wet	52.00		94	80-120	9	30	
Vanadium	72.6	2.38	mg/kg wet	72.30		100	80-120	6	20	
Zinc	747	5.95	mg/kg wet	770.0		97	80-120	7	20	
Batch CL71226 - 7471B										
Blank										

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CL71226 - 7471B										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	18.1	1.68	mg/kg wet	17.80		101	80-120			
LCS Dup										
Mercury	19.0	1.74	mg/kg wet	17.80		107	80-120	5	20	
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71215 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg							
1,1,1-Trichloroethane	ND	0.0050	mg/kg							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg							
1,1,2-Trichloroethane	ND	0.0050	mg/kg							
1,1-Dichloroethane	ND	0.0050	mg/kg							
1,1-Dichloroethene	ND	0.0050	mg/kg							
1,1-Dichloropropene	ND	0.0050	mg/kg							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg							
1,2,3-Trichloropropane	ND	0.0050	mg/kg							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg							
1,2-Dibromoethane	ND	0.0050	mg/kg							
1,2-Dichlorobenzene	ND	0.0050	mg/kg							
1,2-Dichloroethane	ND	0.0050	mg/kg							
1,2-Dichloropropane	ND	0.0050	mg/kg							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg							
1,3-Dichlorobenzene	ND	0.0050	mg/kg							
1,3-Dichloropropane	ND	0.0050	mg/kg							
1,4-Dichlorobenzene	ND	0.0050	mg/kg							
1,4-Dioxane	ND	0.100	mg/kg							
2,2-Dichloropropane	ND	0.0050	mg/kg							
2-Butanone	ND	0.0100	mg/kg							
2-Chlorotoluene	ND	0.0050	mg/kg							
2-Hexanone	ND	0.0100	mg/kg							
4-Chlorotoluene	ND	0.0050	mg/kg							
4-Isopropyltoluene	ND	0.0050	mg/kg							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg							
Acetone	ND	0.0100	mg/kg							
Benzene	ND	0.0050	mg/kg							
Bromobenzene	ND	0.0050	mg/kg							
Bromochloromethane	ND	0.0050	mg/kg							
Bromodichloromethane	ND	0.0050	mg/kg							
Bromoform	ND	0.0050	mg/kg							
Bromomethane	ND	0.0100	mg/kg							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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ESS Laboratory Work Order: 1712171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71215 - 5035										
Carbon Disulfide	ND	0.0050	mg/kg							
Carbon Tetrachloride	ND	0.0050	mg/kg							
Chlorobenzene	ND	0.0050	mg/kg							
Chloroethane	ND	0.0100	mg/kg							
Chloroform	ND	0.0050	mg/kg							
Chloromethane	ND	0.0100	mg/kg							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg							
Dibromochloromethane	ND	0.0020	mg/kg							
Dibromomethane	ND	0.0050	mg/kg							
Dichlorodifluoromethane	ND	0.0100	mg/kg							
Diethyl Ether	ND	0.0050	mg/kg							
Di-isopropyl ether	ND	0.0050	mg/kg							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg							
Ethylbenzene	ND	0.0050	mg/kg							
Hexachlorobutadiene	ND	0.0050	mg/kg							
Isopropylbenzene	ND	0.0050	mg/kg							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg							
Methylene Chloride	ND	0.0100	mg/kg							
Naphthalene	ND	0.0050	mg/kg							
n-Butylbenzene	ND	0.0050	mg/kg							
n-Propylbenzene	ND	0.0050	mg/kg							
sec-Butylbenzene	ND	0.0050	mg/kg							
Styrene	ND	0.0050	mg/kg							
tert-Butylbenzene	ND	0.0050	mg/kg							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg							
Tetrachloroethene	ND	0.0050	mg/kg							
Tetrahydrofuran	ND	0.0050	mg/kg							
Toluene	ND	0.0050	mg/kg							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg							
Trichloroethene	ND	0.0050	mg/kg							
Trichlorofluoromethane	ND	0.0050	mg/kg							
Vinyl Chloride	ND	0.0100	mg/kg							
Xylene O	ND	0.0050	mg/kg							
Xylene P,M	ND	0.0100	mg/kg							
Xylenes (Total)	ND	0.0075	mg/kg							
Surrogate: 1,2-Dichloroethane-d4	*0.0541*		mg/kg	*0.05000*		*108*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0476*		mg/kg	*0.05000*		*95*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0529*		mg/kg	*0.05000*		*106*	*70-130*			
Surrogate: Toluene-d8	*0.0499*		mg/kg	*0.05000*		*100*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0538	0.0050	mg/kg	0.05000		108	70-130			
1,1,1-Trichloroethane	0.0650	0.0050	mg/kg	0.05000		130	70-130			
1,1,2,2-Tetrachloroethane	0.0500	0.0020	mg/kg	0.05000		100	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71215 - 5035										
1,1,2-Trichloroethane	0.0548	0.0050	mg/kg	0.05000		110	70-130			
1,1-Dichloroethane	0.0551	0.0050	mg/kg	0.05000		110	70-130			
1,1-Dichloroethene	0.0557	0.0050	mg/kg	0.05000		111	70-130			
1,1-Dichloropropene	0.0599	0.0050	mg/kg	0.05000		120	70-130			
1,2,3-Trichlorobenzene	0.0549	0.0050	mg/kg	0.05000		110	70-130			
1,2,3-Trichloropropane	0.0535	0.0050	mg/kg	0.05000		107	70-130			
1,2,4-Trichlorobenzene	0.0550	0.0050	mg/kg	0.05000		110	70-130			
1,2,4-Trimethylbenzene	0.0559	0.0050	mg/kg	0.05000		112	70-130			
1,2-Dibromo-3-Chloropropane	0.0501	0.0050	mg/kg	0.05000		100	70-130			
1,2-Dibromoethane	0.0527	0.0050	mg/kg	0.05000		105	70-130			
1,2-Dichlorobenzene	0.0538	0.0050	mg/kg	0.05000		108	70-130			
1,2-Dichloroethane	0.0602	0.0050	mg/kg	0.05000		120	70-130			
1,2-Dichloropropane	0.0541	0.0050	mg/kg	0.05000		108	70-130			
1,3,5-Trimethylbenzene	0.0556	0.0050	mg/kg	0.05000		111	70-130			
1,3-Dichlorobenzene	0.0534	0.0050	mg/kg	0.05000		107	70-130			
1,3-Dichloropropane	0.0539	0.0050	mg/kg	0.05000		108	70-130			
1,4-Dichlorobenzene	0.0541	0.0050	mg/kg	0.05000		108	70-130			
1,4-Dioxane	0.946	0.100	mg/kg	1.000		95	70-130			
2,2-Dichloropropane	0.0634	0.0050	mg/kg	0.05000		127	70-130			
2-Butanone	0.271	0.0100	mg/kg	0.2500		108	70-130			
2-Chlorotoluene	0.0539	0.0050	mg/kg	0.05000		108	70-130			
2-Hexanone	0.216	0.0100	mg/kg	0.2500		86	70-130			
4-Chlorotoluene	0.0550	0.0050	mg/kg	0.05000		110	70-130			
4-Isopropyltoluene	0.0544	0.0050	mg/kg	0.05000		109	70-130			
4-Methyl-2-Pentanone	0.233	0.0100	mg/kg	0.2500		93	70-130			
Acetone	0.272	0.0100	mg/kg	0.2500		109	70-130			
Benzene	0.0551	0.0050	mg/kg	0.05000		110	70-130			
Bromobenzene	0.0536	0.0050	mg/kg	0.05000		107	70-130			
Bromochloromethane	0.0553	0.0050	mg/kg	0.05000		111	70-130			
Bromodichloromethane	0.0647	0.0050	mg/kg	0.05000		129	70-130			
Bromoform	0.0574	0.0050	mg/kg	0.05000		115	70-130			
Bromomethane	0.0556	0.0100	mg/kg	0.05000		111	70-130			
Carbon Disulfide	0.0588	0.0050	mg/kg	0.05000		118	70-130			
Carbon Tetrachloride	0.0623	0.0050	mg/kg	0.05000		125	70-130			
Chlorobenzene	0.0528	0.0050	mg/kg	0.05000		106	70-130			
Chloroethane	0.0552	0.0100	mg/kg	0.05000		110	70-130			
Chloroform	0.0579	0.0050	mg/kg	0.05000		116	70-130			
Chloromethane	0.0572	0.0100	mg/kg	0.05000		114	70-130			
cis-1,2-Dichloroethene	0.0553	0.0050	mg/kg	0.05000		111	70-130			
cis-1,3-Dichloropropene	0.0542	0.0050	mg/kg	0.05000		108	70-130			
Dibromochloromethane	0.0508	0.0020	mg/kg	0.05000		102	70-130			
Dibromomethane	0.0552	0.0050	mg/kg	0.05000		110	70-130			
Dichlorodifluoromethane	0.0544	0.0100	mg/kg	0.05000		109	70-130			
Diethyl Ether	0.0557	0.0050	mg/kg	0.05000		111	70-130			
Di-isopropyl ether	0.0518	0.0050	mg/kg	0.05000		104	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71215 - 5035										
Ethyl tertiary-butyl ether	0.0546	0.0050	mg/kg	0.05000		109	70-130			
Ethylbenzene	0.0534	0.0050	mg/kg	0.05000		107	70-130			
Hexachlorobutadiene	0.0587	0.0050	mg/kg	0.05000		117	70-130			
Isopropylbenzene	0.0516	0.0050	mg/kg	0.05000		103	70-130			
Methyl tert-Butyl Ether	0.0554	0.0050	mg/kg	0.05000		111	70-130			
Methylene Chloride	0.0579	0.0100	mg/kg	0.05000		116	70-130			
Naphthalene	0.0454	0.0050	mg/kg	0.05000		91	70-130			
n-Butylbenzene	0.0542	0.0050	mg/kg	0.05000		108	70-130			
n-Propylbenzene	0.0547	0.0050	mg/kg	0.05000		109	70-130			
sec-Butylbenzene	0.0438	0.0050	mg/kg	0.05000		88	70-130			
Styrene	0.0476	0.0050	mg/kg	0.05000		95	70-130			
tert-Butylbenzene	0.0552	0.0050	mg/kg	0.05000		110	70-130			
Tertiary-amyl methyl ether	0.0536	0.0050	mg/kg	0.05000		107	70-130			
Tetrachloroethene	0.0509	0.0050	mg/kg	0.05000		102	70-130			
Tetrahydrofuran	0.0424	0.0050	mg/kg	0.05000		85	70-130			
Toluene	0.0553	0.0050	mg/kg	0.05000		111	70-130			
trans-1,2-Dichloroethene	0.0545	0.0050	mg/kg	0.05000		109	70-130			
trans-1,3-Dichloropropene	0.0538	0.0050	mg/kg	0.05000		108	70-130			
Trichloroethene	0.0561	0.0050	mg/kg	0.05000		112	70-130			
Trichlorofluoromethane	0.0615	0.0050	mg/kg	0.05000		123	70-130			
Vinyl Chloride	0.0595	0.0100	mg/kg	0.05000		119	70-130			
Xylene O	0.0546	0.0050	mg/kg	0.05000		109	70-130			
Xylene P,M	0.107	0.0100	mg/kg	0.1000		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0569*		mg/kg	*0.05000*		*114*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0521*		mg/kg	*0.05000*		*104*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0557*		mg/kg	*0.05000*		*111*	*70-130*			
Surrogate: Toluene-d8	*0.0486*		mg/kg	*0.05000*		*97*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0482	0.0050	mg/kg	0.05000		96	70-130	11	25	
1,1,1-Trichloroethane	0.0558	0.0050	mg/kg	0.05000		112	70-130	15	25	
1,1,2,2-Tetrachloroethane	0.0443	0.0020	mg/kg	0.05000		89	70-130	12	25	
1,1,2-Trichloroethane	0.0473	0.0050	mg/kg	0.05000		95	70-130	15	25	
1,1-Dichloroethane	0.0471	0.0050	mg/kg	0.05000		94	70-130	16	25	
1,1-Dichloroethene	0.0492	0.0050	mg/kg	0.05000		98	70-130	13	25	
1,1-Dichloropropene	0.0520	0.0050	mg/kg	0.05000		104	70-130	14	25	
1,2,3-Trichlorobenzene	0.0493	0.0050	mg/kg	0.05000		99	70-130	11	25	
1,2,3-Trichloropropane	0.0475	0.0050	mg/kg	0.05000		95	70-130	12	25	
1,2,4-Trichlorobenzene	0.0492	0.0050	mg/kg	0.05000		98	70-130	11	25	
1,2,4-Trimethylbenzene	0.0494	0.0050	mg/kg	0.05000		99	70-130	12	25	
1,2-Dibromo-3-Chloropropane	0.0460	0.0050	mg/kg	0.05000		92	70-130	9	25	
1,2-Dibromoethane	0.0467	0.0050	mg/kg	0.05000		93	70-130	12	25	
1,2-Dichlorobenzene	0.0480	0.0050	mg/kg	0.05000		96	70-130	12	25	
1,2-Dichloroethane	0.0518	0.0050	mg/kg	0.05000		104	70-130	15	25	
1,2-Dichloropropane	0.0468	0.0050	mg/kg	0.05000		94	70-130	15	25	
1,3,5-Trimethylbenzene	0.0494	0.0050	mg/kg	0.05000		99	70-130	12	25	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71215 - 5035										
1,3-Dichlorobenzene	0.0473	0.0050	mg/kg	0.05000		95	70-130	12	25	
1,3-Dichloropropane	0.0481	0.0050	mg/kg	0.05000		96	70-130	11	25	
1,4-Dichlorobenzene	0.0473	0.0050	mg/kg	0.05000		95	70-130	13	25	
1,4-Dioxane	0.869	0.100	mg/kg	1.000		87	70-130	8	20	
2,2-Dichloropropane	0.0541	0.0050	mg/kg	0.05000		108	70-130	16	25	
2-Butanone	0.236	0.0100	mg/kg	0.2500		94	70-130	14	25	
2-Chlorotoluene	0.0478	0.0050	mg/kg	0.05000		96	70-130	12	25	
2-Hexanone	0.199	0.0100	mg/kg	0.2500		79	70-130	8	25	
4-Chlorotoluene	0.0481	0.0050	mg/kg	0.05000		96	70-130	13	25	
4-Isopropyltoluene	0.0483	0.0050	mg/kg	0.05000		97	70-130	12	25	
4-Methyl-2-Pentanone	0.205	0.0100	mg/kg	0.2500		82	70-130	13	25	
Acetone	0.239	0.0100	mg/kg	0.2500		96	70-130	13	25	
Benzene	0.0473	0.0050	mg/kg	0.05000		95	70-130	15	25	
Bromobenzene	0.0476	0.0050	mg/kg	0.05000		95	70-130	12	25	
Bromochloromethane	0.0469	0.0050	mg/kg	0.05000		94	70-130	16	25	
Bromodichloromethane	0.0548	0.0050	mg/kg	0.05000		110	70-130	17	25	
Bromoform	0.0518	0.0050	mg/kg	0.05000		104	70-130	10	25	
Bromomethane	0.0484	0.0100	mg/kg	0.05000		97	70-130	14	25	
Carbon Disulfide	0.0503	0.0050	mg/kg	0.05000		101	70-130	16	25	
Carbon Tetrachloride	0.0533	0.0050	mg/kg	0.05000		107	70-130	16	25	
Chlorobenzene	0.0467	0.0050	mg/kg	0.05000		93	70-130	12	25	
Chloroethane	0.0474	0.0100	mg/kg	0.05000		95	70-130	15	25	
Chloroform	0.0495	0.0050	mg/kg	0.05000		99	70-130	16	25	
Chloromethane	0.0493	0.0100	mg/kg	0.05000		99	70-130	15	25	
cis-1,2-Dichloroethene	0.0470	0.0050	mg/kg	0.05000		94	70-130	16	25	
cis-1,3-Dichloropropene	0.0472	0.0050	mg/kg	0.05000		94	70-130	14	25	
Dibromochloromethane	0.0455	0.0020	mg/kg	0.05000		91	70-130	11	25	
Dibromomethane	0.0473	0.0050	mg/kg	0.05000		95	70-130	15	25	
Dichlorodifluoromethane	0.0463	0.0100	mg/kg	0.05000		93	70-130	16	25	
Diethyl Ether	0.0487	0.0050	mg/kg	0.05000		97	70-130	13	25	
Di-isopropyl ether	0.0450	0.0050	mg/kg	0.05000		90	70-130	14	25	
Ethyl tertiary-butyl ether	0.0471	0.0050	mg/kg	0.05000		94	70-130	15	25	
Ethylbenzene	0.0474	0.0050	mg/kg	0.05000		95	70-130	12	25	
Hexachlorobutadiene	0.0524	0.0050	mg/kg	0.05000		105	70-130	11	25	
Isopropylbenzene	0.0460	0.0050	mg/kg	0.05000		92	70-130	11	25	
Methyl tert-Butyl Ether	0.0488	0.0050	mg/kg	0.05000		98	70-130	13	25	
Methylene Chloride	0.0488	0.0100	mg/kg	0.05000		98	70-130	17	25	
Naphthalene	0.0411	0.0050	mg/kg	0.05000		82	70-130	10	25	
n-Butylbenzene	0.0481	0.0050	mg/kg	0.05000		96	70-130	12	25	
n-Propylbenzene	0.0484	0.0050	mg/kg	0.05000		97	70-130	12	25	
sec-Butylbenzene	0.0387	0.0050	mg/kg	0.05000		77	70-130	12	25	
Styrene	0.0425	0.0050	mg/kg	0.05000		85	70-130	11	25	
tert-Butylbenzene	0.0490	0.0050	mg/kg	0.05000		98	70-130	12	25	
Tertiary-amyl methyl ether	0.0465	0.0050	mg/kg	0.05000		93	70-130	14	25	
Tetrachloroethene	0.0458	0.0050	mg/kg	0.05000		92	70-130	11	25	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71215 - 5035										
Tetrahydrofuran	0.0385	0.0050	mg/kg	0.05000		77	70-130	10	25	
Toluene	0.0474	0.0050	mg/kg	0.05000		95	70-130	15	25	
trans-1,2-Dichloroethene	0.0476	0.0050	mg/kg	0.05000		95	70-130	14	25	
trans-1,3-Dichloropropene	0.0471	0.0050	mg/kg	0.05000		94	70-130	13	25	
Trichloroethene	0.0483	0.0050	mg/kg	0.05000		97	70-130	15	25	
Trichlorofluoromethane	0.0529	0.0050	mg/kg	0.05000		106	70-130	15	25	
Vinyl Chloride	0.0508	0.0100	mg/kg	0.05000		102	70-130	16	25	
Xylene O	0.0486	0.0050	mg/kg	0.05000		97	70-130	12	25	
Xylene P,M	0.0950	0.0100	mg/kg	0.1000		95	70-130	12	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0564*		mg/kg	*0.05000*		*113*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0526*		mg/kg	*0.05000*		*105*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0547*		mg/kg	*0.05000*		*109*	*70-130*			
Surrogate: Toluene-d8	*0.0494*		mg/kg	*0.05000*		*99*	*70-130*			
Batch CL71319 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0557*		mg/kg wet	*0.05000*		*111*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0477*		mg/kg wet	*0.05000*		*95*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0537*		mg/kg wet	*0.05000*		*107*	*70-130*			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
Surrogate: Toluene-d8	*0.0499*		mg/kg wet	*0.05000*		*100*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0627	0.0050	mg/kg wet	0.05000		125	70-130			
1,1,2,2-Tetrachloroethane	0.0462	0.0020	mg/kg wet	0.05000		92	70-130			
1,1,2-Trichloroethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
1,1-Dichloroethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,1-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloropropene	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,2,3-Trichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichloropropane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,4-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dibromo-3-Chloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dibromoethane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichloroethane	0.0586	0.0050	mg/kg wet	0.05000		117	70-130			
1,2-Dichloropropane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
1,3,5-Trimethylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
1,3-Dichlorobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichloropropane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dioxane	0.885	0.100	mg/kg wet	1.000		89	70-130			
2,2-Dichloropropane	0.0594	0.0050	mg/kg wet	0.05000		119	70-130			
2-Butanone	0.263	0.0100	mg/kg wet	0.2500		105	70-130			
2-Chlorotoluene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
2-Hexanone	0.201	0.0100	mg/kg wet	0.2500		80	70-130			
4-Chlorotoluene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
4-Isopropyltoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.226	0.0100	mg/kg wet	0.2500		90	70-130			
Acetone	0.265	0.0100	mg/kg wet	0.2500		106	70-130			
Benzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Bromobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Bromochloromethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Bromodichloromethane	0.0618	0.0050	mg/kg wet	0.05000		124	70-130			
Bromoform	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
Bromomethane	0.0535	0.0100	mg/kg wet	0.05000		107	70-130			
Carbon Disulfide	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
Carbon Tetrachloride	0.0606	0.0050	mg/kg wet	0.05000		121	70-130			
Chlorobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Chloroethane	0.0509	0.0100	mg/kg wet	0.05000		102	70-130			
Chloroform	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
Chloromethane	0.0528	0.0100	mg/kg wet	0.05000		106	70-130			
cis-1,2-Dichloroethene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
cis-1,3-Dichloropropene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
Dibromochloromethane	0.0477	0.0020	mg/kg wet	0.05000		95	70-130			
Dibromomethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Dichlorodifluoromethane	0.0517	0.0100	mg/kg wet	0.05000		103	70-130			
Diethyl Ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Ethyl tertiary-butyl ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Ethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Hexachlorobutadiene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
Isopropylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Methyl tert-Butyl Ether	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Methylene Chloride	0.0538	0.0100	mg/kg wet	0.05000		108	70-130			
Naphthalene	0.0390	0.0050	mg/kg wet	0.05000		78	70-130			
n-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
sec-Butylbenzene	0.0393	0.0050	mg/kg wet	0.05000		79	70-130			
Styrene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
tert-Butylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Tertiary-amyl methyl ether	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrachloroethene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Tetrahydrofuran	0.0394	0.0050	mg/kg wet	0.05000		79	70-130			
Toluene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,2-Dichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Trichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Trichlorofluoromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130			
Vinyl Chloride	0.0555	0.0100	mg/kg wet	0.05000		111	70-130			
Xylene O	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Xylene P,M	0.0949	0.0100	mg/kg wet	0.1000		95	70-130			
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0612*		mg/kg wet	*0.05000*		*122*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0515*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0585*		mg/kg wet	*0.05000*		*117*	*70-130*			
Surrogate: Toluene-d8	*0.0479*		mg/kg wet	*0.05000*		*96*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	5	20	
1,1,1-Trichloroethane	0.0597	0.0050	mg/kg wet	0.05000		119	70-130	5	20	
1,1,2,2-Tetrachloroethane	0.0472	0.0020	mg/kg wet	0.05000		94	70-130	2	20	
1,1,2-Trichloroethane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	7	20	
1,1-Dichloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	4	20	
1,1-Dichloroethene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	3	20	
1,1-Dichloropropene	0.0557	0.0050	mg/kg wet	0.05000		111	70-130	0.3	20	
1,2,3-Trichlorobenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	6	20	
1,2,3-Trichloropropane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	5	20	
1,2,4-Trichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	9	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
1,2,4-Trimethylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	3	20	
1,2-Dibromo-3-Chloropropane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	20	
1,2-Dibromoethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	7	20	
1,2-Dichlorobenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	2	20	
1,2-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	9	20	
1,2-Dichloropropane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	5	20	
1,3,5-Trimethylbenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	4	20	
1,3-Dichlorobenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	5	20	
1,3-Dichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	4	20	
1,4-Dichlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	2	20	
1,4-Dioxane	0.881	0.100	mg/kg wet	1.000		88	70-130	0.5	20	
2,2-Dichloropropane	0.0595	0.0050	mg/kg wet	0.05000		119	70-130	0.1	20	
2-Butanone	0.257	0.0100	mg/kg wet	0.2500		103	70-130	2	20	
2-Chlorotoluene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	6	20	
2-Hexanone	0.223	0.0100	mg/kg wet	0.2500		89	70-130	10	20	
4-Chlorotoluene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	3	20	
4-Isopropyltoluene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
4-Methyl-2-Pentanone	0.219	0.0100	mg/kg wet	0.2500		88	70-130	3	20	
Acetone	0.311	0.0100	mg/kg wet	0.2500		125	70-130	16	20	
Benzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	4	20	
Bromobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	20	
Bromochloromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	20	
Bromodichloromethane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130	8	20	
Bromoform	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	4	20	
Bromomethane	0.0513	0.0100	mg/kg wet	0.05000		103	70-130	4	20	
Carbon Disulfide	0.0547	0.0050	mg/kg wet	0.05000		109	70-130	2	20	
Carbon Tetrachloride	0.0574	0.0050	mg/kg wet	0.05000		115	70-130	5	20	
Chlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	8	20	
Chloroethane	0.0517	0.0100	mg/kg wet	0.05000		103	70-130	1	20	
Chloroform	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	7	20	
Chloromethane	0.0543	0.0100	mg/kg wet	0.05000		109	70-130	3	20	
cis-1,2-Dichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	20	
cis-1,3-Dichloropropene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	3	20	
Dibromochloromethane	0.0489	0.0020	mg/kg wet	0.05000		98	70-130	3	20	
Dibromomethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	9	20	
Dichlorodifluoromethane	0.0510	0.0100	mg/kg wet	0.05000		102	70-130	1	20	
Diethyl Ether	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	0.6	20	
Di-isopropyl ether	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	2	20	
Ethyl tertiary-butyl ether	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
Ethylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	10	20	
Hexachlorobutadiene	0.0573	0.0050	mg/kg wet	0.05000		115	70-130	6	20	
Isopropylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	7	20	
Methyl tert-Butyl Ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
Methylene Chloride	0.0505	0.0100	mg/kg wet	0.05000		101	70-130	6	20	
Naphthalene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	9	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
n-Butylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	6	20	
n-Propylbenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	6	20	
sec-Butylbenzene	0.0405	0.0050	mg/kg wet	0.05000		81	70-130	3	20	
Styrene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	9	20	
tert-Butylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	6	20	
Tertiary-amyl methyl ether	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	2	20	
Tetrachloroethene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	11	20	
Tetrahydrofuran	0.0402	0.0050	mg/kg wet	0.05000		80	70-130	2	20	
Toluene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	3	20	
trans-1,2-Dichloroethene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	2	20	
trans-1,3-Dichloropropene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	1	20	
Trichloroethene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	20	
Trichlorofluoromethane	0.0573	0.0050	mg/kg wet	0.05000		115	70-130	3	20	
Vinyl Chloride	0.0562	0.0100	mg/kg wet	0.05000		112	70-130	1	20	
Xylene O	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	7	20	
Xylene P,M	0.103	0.0100	mg/kg wet	0.1000		103	70-130	8	20	
Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0538*		mg/kg wet	*0.05000*		*108*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0531*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0526*		mg/kg wet	*0.05000*		*105*	*70-130*			
Surrogate: Toluene-d8	*0.0506*		mg/kg wet	*0.05000*		*101*	*70-130*			
Batch CL71434 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0529*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0480*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0522*		mg/kg wet	*0.05000*		*104*	*70-130*			
Surrogate: Toluene-d8	*0.0501*		mg/kg wet	*0.05000*		*100*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
1,1,1-Trichloroethane	0.0610	0.0050	mg/kg wet	0.05000		122	70-130			
1,1,2,2-Tetrachloroethane	0.0488	0.0020	mg/kg wet	0.05000		98	70-130			
1,1,2-Trichloroethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloroethane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
1,1-Dichloroethene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,1-Dichloropropene	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
1,2,3-Trichlorobenzene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
1,2,3-Trichloropropane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,2,4-Trichlorobenzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,2,4-Trimethylbenzene	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
1,2-Dibromo-3-Chloropropane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dibromoethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
1,2-Dichloroethane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,3,5-Trimethylbenzene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,3-Dichlorobenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,3-Dichloropropane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
1,4-Dioxane	0.905	0.100	mg/kg wet	1.000		91	70-130			
2,2-Dichloropropane	0.0595	0.0050	mg/kg wet	0.05000		119	70-130			
2-Butanone	0.250	0.0100	mg/kg wet	0.2500		100	70-130			
2-Chlorotoluene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
2-Hexanone	0.205	0.0100	mg/kg wet	0.2500		82	70-130			
4-Chlorotoluene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
4-Isopropyltoluene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
4-Methyl-2-Pentanone	0.214	0.0100	mg/kg wet	0.2500		85	70-130			
Acetone	0.249	0.0100	mg/kg wet	0.2500		100	70-130			
Benzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Bromobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromochloromethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Bromodichloromethane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130			
Bromoform	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			
Bromomethane	0.0536	0.0100	mg/kg wet	0.05000		107	70-130			

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
Carbon Disulfide	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Carbon Tetrachloride	0.0584	0.0050	mg/kg wet	0.05000		117	70-130			
Chlorobenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Chloroethane	0.0530	0.0100	mg/kg wet	0.05000		106	70-130			
Chloroform	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
Chloromethane	0.0554	0.0100	mg/kg wet	0.05000		111	70-130			
cis-1,2-Dichloroethene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
cis-1,3-Dichloropropene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Dibromochloromethane	0.0492	0.0020	mg/kg wet	0.05000		98	70-130			
Dibromomethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Dichlorodifluoromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130			
Diethyl Ether	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Di-isopropyl ether	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Ethylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0586	0.0050	mg/kg wet	0.05000		117	70-130			
Isopropylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Methyl tert-Butyl Ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Methylene Chloride	0.0526	0.0100	mg/kg wet	0.05000		105	70-130			
Naphthalene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
n-Butylbenzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
n-Propylbenzene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
sec-Butylbenzene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
Styrene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
tert-Butylbenzene	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
Tertiary-amyl methyl ether	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Tetrachloroethene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Tetrahydrofuran	0.0404	0.0050	mg/kg wet	0.05000		81	70-130			
Toluene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
trans-1,2-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
trans-1,3-Dichloropropene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Trichloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Trichlorofluoromethane	0.0578	0.0050	mg/kg wet	0.05000		116	70-130			
Vinyl Chloride	0.0569	0.0100	mg/kg wet	0.05000		114	70-130			
Xylene O	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.157	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0531*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0504*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0530*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: Toluene-d8	*0.0490*		mg/kg wet	*0.05000*		*98*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	20	
1,1,1-Trichloroethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	7	20	
1,1,2,2-Tetrachloroethane	0.0483	0.0020	mg/kg wet	0.05000		97	70-130	1	20	

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
1,1,2-Trichloroethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	3	20	
1,1-Dichloroethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	6	20	
1,1-Dichloroethene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	6	20	
1,1-Dichloropropene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	6	20	
1,2,3-Trichlorobenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	0.9	20	
1,2,3-Trichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	0.4	20	
1,2,4-Trichlorobenzene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	1	20	
1,2,4-Trimethylbenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	4	20	
1,2-Dibromo-3-Chloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	3	20	
1,2-Dibromoethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	5	20	
1,2-Dichlorobenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
1,2-Dichloroethane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	4	20	
1,2-Dichloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	3	20	
1,3,5-Trimethylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	5	20	
1,3-Dichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	1	20	
1,3-Dichloropropane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	4	20	
1,4-Dichlorobenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	6	20	
1,4-Dioxane	0.939	0.100	mg/kg wet	1.000		94	70-130	4	20	
2,2-Dichloropropane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	6	20	
2-Butanone	0.247	0.0100	mg/kg wet	0.2500		99	70-130	1	20	
2-Chlorotoluene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	5	20	
2-Hexanone	0.204	0.0100	mg/kg wet	0.2500		82	70-130	0.6	20	
4-Chlorotoluene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	3	20	
4-Isopropyltoluene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	5	20	
4-Methyl-2-Pentanone	0.218	0.0100	mg/kg wet	0.2500		87	70-130	2	20	
Acetone	0.246	0.0100	mg/kg wet	0.2500		98	70-130	1	20	
Benzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	20	
Bromobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	3	20	
Bromochloromethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	4	20	
Bromodichloromethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	5	20	
Bromoform	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	3	20	
Bromomethane	0.0500	0.0100	mg/kg wet	0.05000		100	70-130	7	20	
Carbon Disulfide	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	6	20	
Carbon Tetrachloride	0.0547	0.0050	mg/kg wet	0.05000		109	70-130	7	20	
Chlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	6	20	
Chloroethane	0.0500	0.0100	mg/kg wet	0.05000		100	70-130	6	20	
Chloroform	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	5	20	
Chloromethane	0.0536	0.0100	mg/kg wet	0.05000		107	70-130	3	20	
cis-1,2-Dichloroethene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	5	20	
cis-1,3-Dichloropropene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	3	20	
Dibromochloromethane	0.0480	0.0020	mg/kg wet	0.05000		96	70-130	3	20	
Dibromomethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	20	
Dichlorodifluoromethane	0.0504	0.0100	mg/kg wet	0.05000		101	70-130	7	20	
Diethyl Ether	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
Di-isopropyl ether	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	3	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
Ethyl tertiary-butyl ether	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
Ethylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	6	20	
Hexachlorobutadiene	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	4	20	
Isopropylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	20	
Methyl tert-Butyl Ether	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	0.8	20	
Methylene Chloride	0.0502	0.0100	mg/kg wet	0.05000		100	70-130	5	20	
Naphthalene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	1	20	
n-Butylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	4	20	
n-Propylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	5	20	
sec-Butylbenzene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130	4	20	
Styrene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	5	20	
tert-Butylbenzene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	5	20	
Tertiary-amyl methyl ether	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	0.6	20	
Tetrachloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	7	20	
Tetrahydrofuran	0.0421	0.0050	mg/kg wet	0.05000		84	70-130	4	20	
Toluene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	5	20	
trans-1,2-Dichloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	4	20	
trans-1,3-Dichloropropene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	2	20	
Trichloroethene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	5	20	
Trichlorofluoromethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	7	20	
Vinyl Chloride	0.0533	0.0100	mg/kg wet	0.05000		107	70-130	6	20	
Xylene O	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	7	20	
Xylene P,M	0.0975	0.0100	mg/kg wet	0.1000		97	70-130	6	20	
Xylenes (Total)	0.147	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0545*		mg/kg wet	*0.05000*		*109*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0501*		mg/kg wet	*0.05000*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0529*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: Toluene-d8	*0.0483*		mg/kg wet	*0.05000*		*97*	*70-130*			
8081B Organochlorine Pesticides										
Batch CL71208 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71208 - 3546										
beta-BHC [2C]	ND	0.0025	mg/kg wet							
Chlordane (Total)	ND	0.0200	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0200	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0112*		mg/kg wet	*0.01250*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0118*		mg/kg wet	*0.01250*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00905*		mg/kg wet	*0.01250*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0101*		mg/kg wet	*0.01250*		*81*	*30-150*			
LCS										
4,4´-DDD	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
4,4´-DDD [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
4,4´-DDE	0.0093	0.0025	mg/kg wet	0.01250		75	40-140			
4,4´-DDE [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140			
4,4´-DDT	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
4,4´-DDT [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
Aldrin	0.0083	0.0025	mg/kg wet	0.01250		67	40-140			
Aldrin [2C]	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
alpha-BHC	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
alpha-BHC [2C]	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71208 - 3546										
alpha-Chlordane	0.0089	0.0025	mg/kg wet	0.01250		71	40-140			
alpha-Chlordane [2C]	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
beta-BHC	0.0086	0.0025	mg/kg wet	0.01250		69	40-140			
beta-BHC [2C]	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
delta-BHC	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
delta-BHC [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Dieldrin	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
Dieldrin [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Endosulfan I	0.0092	0.0025	mg/kg wet	0.01250		74	40-140			
Endosulfan I [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
Endosulfan II	0.0086	0.0025	mg/kg wet	0.01250		68	40-140			
Endosulfan II [2C]	0.0092	0.0025	mg/kg wet	0.01250		74	40-140			
Endosulfan Sulfate	0.0087	0.0025	mg/kg wet	0.01250		69	40-140			
Endosulfan Sulfate [2C]	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
Endrin	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
Endrin [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
Endrin Ketone	0.0091	0.0025	mg/kg wet	0.01250		73	40-140			
Endrin Ketone [2C]	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
gamma-BHC (Lindane)	0.0089	0.0015	mg/kg wet	0.01250		71	40-140			
gamma-BHC (Lindane) [2C]	0.0100	0.0015	mg/kg wet	0.01250		80	40-140			
gamma-Chlordane	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
gamma-Chlordane [2C]	0.0098	0.0025	mg/kg wet	0.01250		78	40-140			
Heptachlor	0.0080	0.0025	mg/kg wet	0.01250		64	40-140			
Heptachlor [2C]	0.0078	0.0025	mg/kg wet	0.01250		62	40-140			
Heptachlor Epoxide	0.0094	0.0025	mg/kg wet	0.01250		75	40-140			
Heptachlor Epoxide [2C]	0.0102	0.0025	mg/kg wet	0.01250		81	40-140			
Hexachlorobenzene	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Hexachlorobenzene [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
Methoxychlor	0.0084	0.0025	mg/kg wet	0.01250		67	40-140			
Methoxychlor [2C]	0.0083	0.0025	mg/kg wet	0.01250		66	40-140			
Surrogate: Decachlorobiphenyl	*0.0121*		mg/kg wet	*0.01250*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0128*		mg/kg wet	*0.01250*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00967*		mg/kg wet	*0.01250*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0105*		mg/kg wet	*0.01250*		*84*	*30-150*			
LCS Dup										
4,4´-DDD	0.0098	0.0025	mg/kg wet	0.01250		79	40-140	6	30	
4,4´-DDD [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	9	30	
4,4´-DDE	0.0099	0.0025	mg/kg wet	0.01250		79	40-140	5	30	
4,4´-DDE [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	8	30	
4,4´-DDT	0.0098	0.0025	mg/kg wet	0.01250		78	40-140	3	30	
4,4´-DDT [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	7	30	
Aldrin	0.0089	0.0025	mg/kg wet	0.01250		71	40-140	7	30	
Aldrin [2C]	0.0101	0.0025	mg/kg wet	0.01250		81	40-140	9	30	
alpha-BHC	0.0097	0.0025	mg/kg wet	0.01250		78	40-140	8	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71208 - 3546										
alpha-BHC [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	10	30	
alpha-Chlordane	0.0095	0.0025	mg/kg wet	0.01250		76	40-140	6	30	
alpha-Chlordane [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	9	30	
beta-BHC	0.0092	0.0025	mg/kg wet	0.01250		73	40-140	7	30	
beta-BHC [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	8	30	
delta-BHC	0.0101	0.0025	mg/kg wet	0.01250		81	40-140	8	30	
delta-BHC [2C]	0.0114	0.0025	mg/kg wet	0.01250		92	40-140	9	30	
Dieldrin	0.0102	0.0025	mg/kg wet	0.01250		82	40-140	6	30	
Dieldrin [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	8	30	
Endosulfan I	0.0097	0.0025	mg/kg wet	0.01250		78	40-140	6	30	
Endosulfan I [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	9	30	
Endosulfan II	0.0091	0.0025	mg/kg wet	0.01250		72	40-140	6	30	
Endosulfan II [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140	9	30	
Endosulfan Sulfate	0.0092	0.0025	mg/kg wet	0.01250		74	40-140	6	30	
Endosulfan Sulfate [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140	9	30	
Endrin	0.0098	0.0025	mg/kg wet	0.01250		78	40-140	5	30	
Endrin [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	8	30	
Endrin Ketone	0.0098	0.0025	mg/kg wet	0.01250		79	40-140	7	30	
Endrin Ketone [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	9	30	
gamma-BHC (Lindane)	0.0097	0.0015	mg/kg wet	0.01250		78	40-140	9	30	
gamma-BHC (Lindane) [2C]	0.0110	0.0015	mg/kg wet	0.01250		88	40-140	10	30	
gamma-Chlordane	0.0095	0.0025	mg/kg wet	0.01250		76	40-140	6	30	
gamma-Chlordane [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	9	30	
Heptachlor	0.0083	0.0025	mg/kg wet	0.01250		66	40-140	4	30	
Heptachlor [2C]	0.0081	0.0025	mg/kg wet	0.01250		65	40-140	4	30	
Heptachlor Epoxide	0.0101	0.0025	mg/kg wet	0.01250		80	40-140	7	30	
Heptachlor Epoxide [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	9	30	
Hexachlorobenzene	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	7	30	
Hexachlorobenzene [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140	9	30	
Methoxychlor	0.0087	0.0025	mg/kg wet	0.01250		69	40-140	3	30	
Methoxychlor [2C]	0.0088	0.0025	mg/kg wet	0.01250		70	40-140	6	30	
Surrogate: Decachlorobiphenyl	*0.0126*		mg/kg wet	*0.01250*		*101*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0136*		mg/kg wet	*0.01250*		*108*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00999*		mg/kg wet	*0.01250*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0110*		mg/kg wet	*0.01250*		*88*	*30-150*			
Batch CL71351 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71351 - 3546										
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
Chlordane (Total)	ND	0.0200	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0200	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0141*		mg/kg wet	*0.01250*		*113*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0142*		mg/kg wet	*0.01250*		*113*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0118*		mg/kg wet	*0.01250*		*94*	*30-150*			
LCS										
4,4´-DDD	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
4,4´-DDD [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
4,4´-DDE	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
4,4´-DDE [2C]	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71351 - 3546										
4,4´-DDT	0.0103	0.0025	mg/kg wet	0.01250		82	40-140			
4,4´-DDT [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140			
Aldrin	0.0103	0.0025	mg/kg wet	0.01250		82	40-140			
Aldrin [2C]	0.0109	0.0025	mg/kg wet	0.01250		88	40-140			
alpha-BHC	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
alpha-BHC [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
alpha-Chlordane	0.0108	0.0025	mg/kg wet	0.01250		87	40-140			
alpha-Chlordane [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
beta-BHC	0.0103	0.0025	mg/kg wet	0.01250		82	40-140			
beta-BHC [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140			
delta-BHC	0.0111	0.0025	mg/kg wet	0.01250		88	40-140			
delta-BHC [2C]	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Dieldrin	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Dieldrin [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Endosulfan I	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Endosulfan I [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Endosulfan II	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
Endosulfan II [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140			
Endosulfan Sulfate	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Endosulfan Sulfate [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140			
Endrin	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
Endrin [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Endrin Ketone	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
Endrin Ketone [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
gamma-BHC (Lindane)	0.0111	0.0015	mg/kg wet	0.01250		89	40-140			
gamma-BHC (Lindane) [2C]	0.0118	0.0015	mg/kg wet	0.01250		95	40-140			
gamma-Chlordane	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
gamma-Chlordane [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Heptachlor	0.0089	0.0025	mg/kg wet	0.01250		71	40-140			
Heptachlor [2C]	0.0083	0.0025	mg/kg wet	0.01250		67	40-140			
Heptachlor Epoxide	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Heptachlor Epoxide [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
Hexachlorobenzene	0.0138	0.0025	mg/kg wet	0.01250		110	40-140			
Hexachlorobenzene [2C]	0.0128	0.0025	mg/kg wet	0.01250		102	40-140			
Methoxychlor	0.0091	0.0025	mg/kg wet	0.01250		72	40-140			
Methoxychlor [2C]	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
Surrogate: Decachlorobiphenyl	*0.0147*		mg/kg wet	*0.01250*		*118*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0149*		mg/kg wet	*0.01250*		*119*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0119*		mg/kg wet	*0.01250*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0124*		mg/kg wet	*0.01250*		*99*	*30-150*			
LCS Dup										
4,4´-DDD	0.0116	0.0025	mg/kg wet	0.01250		92	40-140	5	30	
4,4´-DDD [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	6	30	
4,4´-DDE	0.0118	0.0025	mg/kg wet	0.01250		94	40-140	6	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71351 - 3546										
4,4´-DDE [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	8	30	
4,4´-DDT	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	1	30	
4,4´-DDT [2C]	0.0112	0.0025	mg/kg wet	0.01250		89	40-140	3	30	
Aldrin	0.0070	0.0025	mg/kg wet	0.01250		56	40-140	38	30	D+
Aldrin [2C]	0.0074	0.0025	mg/kg wet	0.01250		59	40-140	38	30	D+
alpha-BHC	0.0118	0.0025	mg/kg wet	0.01250		94	40-140	4	30	
alpha-BHC [2C]	0.0127	0.0025	mg/kg wet	0.01250		102	40-140	5	30	
alpha-Chlordane	0.0113	0.0025	mg/kg wet	0.01250		90	40-140	4	30	
alpha-Chlordane [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140	7	30	
beta-BHC	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	3	30	
beta-BHC [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	6	30	
delta-BHC	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	5	30	
delta-BHC [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	7	30	
Dieldrin	0.0121	0.0025	mg/kg wet	0.01250		97	40-140	4	30	
Dieldrin [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	5	30	
Endosulfan I	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	3	30	
Endosulfan I [2C]	0.0123	0.0025	mg/kg wet	0.01250		99	40-140	6	30	
Endosulfan II	0.0100	0.0025	mg/kg wet	0.01250		80	40-140	3	30	
Endosulfan II [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	3	30	
Endosulfan Sulfate	0.0101	0.0025	mg/kg wet	0.01250		81	40-140	3	30	
Endosulfan Sulfate [2C]	0.0104	0.0025	mg/kg wet	0.01250		84	40-140	4	30	
Endrin	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	3	30	
Endrin [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	3	30	
Endrin Ketone	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	3	30	
Endrin Ketone [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	1	30	
gamma-BHC (Lindane)	0.0115	0.0015	mg/kg wet	0.01250		92	40-140	4	30	
gamma-BHC (Lindane) [2C]	0.0125	0.0015	mg/kg wet	0.01250		100	40-140	5	30	
gamma-Chlordane	0.0116	0.0025	mg/kg wet	0.01250		92	40-140	5	30	
gamma-Chlordane [2C]	0.0123	0.0025	mg/kg wet	0.01250		99	40-140	7	30	
Heptachlor	0.0071	0.0025	mg/kg wet	0.01250		57	40-140	22	30	
Heptachlor [2C]	0.0068	0.0025	mg/kg wet	0.01250		54	40-140	20	30	
Heptachlor Epoxide	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	4	30	
Heptachlor Epoxide [2C]	0.0127	0.0025	mg/kg wet	0.01250		101	40-140	5	30	
Hexachlorobenzene	0.0143	0.0025	mg/kg wet	0.01250		115	40-140	4	30	
Hexachlorobenzene [2C]	0.0134	0.0025	mg/kg wet	0.01250		108	40-140	5	30	
Methoxychlor	0.0058	0.0025	mg/kg wet	0.01250		47	40-140	43	30	D+
Methoxychlor [2C]	0.0056	0.0025	mg/kg wet	0.01250		45	40-140	46	30	D+
Surrogate: Decachlorobiphenyl	*0.0150*		mg/kg wet	*0.01250*		*120*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0155*		mg/kg wet	*0.01250*		*124*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0120*		mg/kg wet	*0.01250*		*96*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0125*		mg/kg wet	*0.01250*		*100*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71113 - 3540C										

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71113 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0249*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0262*		mg/kg wet	*0.02500*		*105*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0218*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0247*		mg/kg wet	*0.02500*		*99*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		104	40-140			
Aroclor 1016 [2C]	0.6	0.05	mg/kg wet	0.5000		114	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		101	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		105	40-140			
Surrogate: Decachlorobiphenyl	*0.0269*		mg/kg wet	*0.02500*		*108*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0281*		mg/kg wet	*0.02500*		*112*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0230*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0245*		mg/kg wet	*0.02500*		*98*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		102	40-140	2	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		108	40-140	6	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		100	40-140	1	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		101	40-140	4	30	
Surrogate: Decachlorobiphenyl	*0.0265*		mg/kg wet	*0.02500*		*106*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0256*		mg/kg wet	*0.02500*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0232*		mg/kg wet	*0.02500*		*93*	*30-150*			
Batch CL71114 - 3540C										

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71114 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0191*		mg/kg wet	*0.02500*		*76*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0206*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0165*		mg/kg wet	*0.02500*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0190*		mg/kg wet	*0.02500*		*76*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		94	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		99	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		101	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		92	40-140			
Surrogate: Decachlorobiphenyl	*0.0244*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0247*		mg/kg wet	*0.02500*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0222*		mg/kg wet	*0.02500*		*89*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		95	40-140	2	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		101	40-140	2	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		104	40-140	3	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		94	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0243*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0250*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0215*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
8151A Chlorinated Herbicides										

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL71832 - 3546										
Blank										
2,4,5-T	ND	0.010	mg/kg wet							
2,4,5-T [2C]	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex)	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	0.010	mg/kg wet							
2,4-D	ND	0.047	mg/kg wet							
2,4-D [2C]	ND	0.047	mg/kg wet							
2,4-DB	ND	0.048	mg/kg wet							
2,4-DB [2C]	ND	0.048	mg/kg wet							
Dalapon	ND	0.046	mg/kg wet							
Dalapon [2C]	ND	0.046	mg/kg wet							
Dicamba	ND	0.009	mg/kg wet							
Dicamba [2C]	ND	0.009	mg/kg wet							
Dichlorprop	ND	0.047	mg/kg wet							
Dichlorprop [2C]	ND	0.047	mg/kg wet							
Dinoseb	ND	0.048	mg/kg wet							
Dinoseb [2C]	ND	0.048	mg/kg wet							
MCPA	ND	2.32	mg/kg wet							
MCPA [2C]	ND	2.32	mg/kg wet							
MCPP	ND	2.35	mg/kg wet							
MCPP [2C]	ND	2.35	mg/kg wet							
Surrogate: DCAA	*0.114*		mg/kg wet	*0.2000*		*57*	*30-150*			
Surrogate: DCAA [2C]	*0.122*		mg/kg wet	*0.2000*		*61*	*30-150*			
LCS										
2,4,5-T	0.011	0.010	mg/kg wet	0.01900		56	40-140			
2,4,5-T [2C]	0.012	0.010	mg/kg wet	0.01900		62	40-140			
2,4,5-TP (Silvex)	0.011	0.010	mg/kg wet	0.01900		60	40-140			
2,4,5-TP (Silvex) [2C]	0.012	0.010	mg/kg wet	0.01900		62	40-140			
2,4-D	0.098	0.047	mg/kg wet	0.1880		52	40-140			
2,4-D [2C]	0.111	0.047	mg/kg wet	0.1880		59	40-140			
2,4-DB	0.112	0.048	mg/kg wet	0.1900		59	40-140			
2,4-DB [2C]	0.110	0.048	mg/kg wet	0.1900		58	40-140			
Dalapon	0.210	0.046	mg/kg wet	0.4550		46	40-140			
Dalapon [2C]	0.268	0.046	mg/kg wet	0.4550		59	40-140			
Dicamba	0.011	0.009	mg/kg wet	0.01880		60	40-140			
Dicamba [2C]	0.014	0.009	mg/kg wet	0.01880		72	40-140			
Dichlorprop	0.130	0.047	mg/kg wet	0.1880		69	40-140			
Dichlorprop [2C]	0.123	0.047	mg/kg wet	0.1880		65	40-140			
Dinoseb	0.015	0.048	mg/kg wet	0.09500		16	10-100			
Dinoseb [2C]	0.017	0.048	mg/kg wet	0.09500		18	10-100			
MCPA	12.4	2.32	mg/kg wet	18.60		67	40-140			
MCPA [2C]	13.7	2.32	mg/kg wet	18.60		73	40-140			
MCPP	11.5	2.35	mg/kg wet	18.80		61	40-140			
MCPP [2C]	12.7	2.35	mg/kg wet	18.80		68	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL71832 - 3546										
Surrogate: DCAA	*0.138*		mg/kg wet	*0.2000*		*69*	*30-150*			
Surrogate: DCAA [2C]	*0.143*		mg/kg wet	*0.2000*		*71*	*30-150*			
LCS Dup										
2,4,5-T	0.012	0.010	mg/kg wet	0.01900		64	40-140	13	30	
2,4,5-T [2C]	0.013	0.010	mg/kg wet	0.01900		70	40-140	12	30	
2,4,5-TP (Silvex)	0.013	0.010	mg/kg wet	0.01900		66	40-140	10	30	
2,4,5-TP (Silvex) [2C]	0.012	0.010	mg/kg wet	0.01900		62	40-140	0	30	
2,4-D	0.111	0.047	mg/kg wet	0.1880		59	40-140	13	30	
2,4-D [2C]	0.122	0.047	mg/kg wet	0.1880		65	40-140	9	30	
2,4-DB	0.108	0.048	mg/kg wet	0.1900		57	40-140	4	30	
2,4-DB [2C]	0.102	0.048	mg/kg wet	0.1900		54	40-140	8	30	
Dalapon	0.244	0.046	mg/kg wet	0.4550		54	40-140	15	30	
Dalapon [2C]	0.315	0.046	mg/kg wet	0.4550		69	40-140	16	30	
Dicamba	0.013	0.009	mg/kg wet	0.01880		70	40-140	15	30	
Dicamba [2C]	0.015	0.009	mg/kg wet	0.01880		82	40-140	13	30	
Dichlorprop	0.149	0.047	mg/kg wet	0.1880		79	40-140	13	30	
Dichlorprop [2C]	0.139	0.047	mg/kg wet	0.1880		74	40-140	13	30	
Dinoseb	0.024	0.048	mg/kg wet	0.09500		26	10-100	46	30	
Dinoseb [2C]	0.019	0.048	mg/kg wet	0.09500		20	10-100	8	30	
MCPA	15.6	2.32	mg/kg wet	18.60		84	40-140	22	30	
MCPA [2C]	13.6	2.32	mg/kg wet	18.60		73	40-140	0.5	30	
MCPP	12.6	2.35	mg/kg wet	18.80		67	40-140	8	30	
MCPP [2C]	13.5	2.35	mg/kg wet	18.80		72	40-140	6	30	
Surrogate: DCAA	*0.141*		mg/kg wet	*0.2000*		*71*	*30-150*			
Surrogate: DCAA [2C]	*0.144*		mg/kg wet	*0.2000*		*72*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CL71119 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71119 - 3546										
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71119 - 3546										
Surrogate: 1,2-Dichlorobenzene-d4	*2.43*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.57*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.80*		mg/kg wet	*5.000*		*76*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.53*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: 2-Fluorophenol	*3.50*		mg/kg wet	*5.000*		*70*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.52*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: Phenol-d6	*3.66*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.04*		mg/kg wet	*3.333*		*91*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.86	0.333	mg/kg wet	3.333		86	40-140			
1,2-Dichlorobenzene	2.60	0.333	mg/kg wet	3.333		78	40-140			
1,3-Dichlorobenzene	2.58	0.333	mg/kg wet	3.333		77	40-140			
1,4-Dichlorobenzene	2.57	0.333	mg/kg wet	3.333		77	40-140			
2,4,5-Trichlorophenol	3.26	0.333	mg/kg wet	3.333		98	30-130			
2,4,6-Trichlorophenol	3.22	0.333	mg/kg wet	3.333		97	30-130			
2,4-Dichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
2,4-Dimethylphenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dinitrophenol	3.74	1.67	mg/kg wet	3.333		112	30-130			
2,4-Dinitrotoluene	3.08	0.333	mg/kg wet	3.333		93	40-140			
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		86	40-140			
2-Chloronaphthalene	2.51	0.333	mg/kg wet	3.333		75	40-140			
2-Chlorophenol	2.51	0.333	mg/kg wet	3.333		75	30-130			
2-Methylnaphthalene	2.71	0.333	mg/kg wet	3.333		81	40-140			
2-Methylphenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
2-Nitrophenol	2.84	0.333	mg/kg wet	3.333		85	30-130			
3,3´-Dichlorobenzidine	2.40	0.667	mg/kg wet	3.333		72	40-140			
3+4-Methylphenol	5.26	0.667	mg/kg wet	6.667		79	30-130			
4-Bromophenyl-phenylether	3.11	0.333	mg/kg wet	3.333		93	40-140			
4-Chloroaniline	2.00	0.667	mg/kg wet	3.333		60	40-140			
4-Nitrophenol	2.70	1.67	mg/kg wet	3.333		81	30-130			
Acenaphthene	2.76	0.333	mg/kg wet	3.333		83	40-140			
Acenaphthylene	2.63	0.333	mg/kg wet	3.333		79	40-140			
Acetophenone	2.48	0.667	mg/kg wet	3.333		74	40-140			
Aniline	1.60	1.67	mg/kg wet	3.333		48	40-140			
Anthracene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.35	0.333	mg/kg wet	3.333		71	40-140			
Benzo(a)anthracene	2.73	0.333	mg/kg wet	3.333		82	40-140			
Benzo(a)pyrene	2.92	0.167	mg/kg wet	3.333		88	40-140			
Benzo(b)fluoranthene	2.88	0.333	mg/kg wet	3.333		86	40-140			
Benzo(g,h,i)perylene	3.32	0.333	mg/kg wet	3.333		100	40-140			
Benzo(k)fluoranthene	2.97	0.333	mg/kg wet	3.333		89	40-140			
bis(2-Chloroethoxy)methane	2.49	0.333	mg/kg wet	3.333		75	40-140			
bis(2-Chloroethyl)ether	2.35	0.333	mg/kg wet	3.333		71	40-140			
bis(2-chloroisopropyl)Ether	2.40	0.333	mg/kg wet	3.333		72	40-140			
bis(2-Ethylhexyl)phthalate	3.27	0.333	mg/kg wet	3.333		98	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71119 - 3546										
Butylbenzylphthalate	3.08	0.333	mg/kg wet	3.333		92	40-140			
Chrysene	2.97	0.167	mg/kg wet	3.333		89	40-140			
Dibenzo(a,h)Anthracene	3.27	0.167	mg/kg wet	3.333		98	40-140			
Dibenzofuran	2.76	0.333	mg/kg wet	3.333		83	40-140			
Diethylphthalate	3.05	0.333	mg/kg wet	3.333		91	40-140			
Dimethylphthalate	2.94	0.333	mg/kg wet	3.333		88	40-140			
Di-n-butylphthalate	3.21	0.333	mg/kg wet	3.333		96	40-140			
Di-n-octylphthalate	3.38	0.333	mg/kg wet	3.333		102	40-140			
Fluoranthene	3.17	0.333	mg/kg wet	3.333		95	40-140			
Fluorene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Hexachlorobenzene	3.15	0.333	mg/kg wet	3.333		94	40-140			
Hexachlorobutadiene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Hexachloroethane	2.52	0.333	mg/kg wet	3.333		76	40-140			
Indeno(1,2,3-cd)Pyrene	3.28	0.333	mg/kg wet	3.333		98	40-140			
Isophorone	2.26	0.333	mg/kg wet	3.333		68	40-140			
Naphthalene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Nitrobenzene	2.60	0.333	mg/kg wet	3.333		78	40-140			
N-Nitrosodimethylamine	1.85	0.333	mg/kg wet	3.333		56	40-140			
Pentachlorophenol	3.29	1.67	mg/kg wet	3.333		99	30-130			
Phenanthrene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Phenol	2.45	0.333	mg/kg wet	3.333		74	30-130			
Pyrene	2.84	0.333	mg/kg wet	3.333		85	40-140			
Pyridine	1.75	1.67	mg/kg wet	3.333		52	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.52*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*5.05*		mg/kg wet	*5.000*		*101*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.96*		mg/kg wet	*5.000*		*79*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.79*		mg/kg wet	*3.333*		*84*	*30-130*			
Surrogate: 2-Fluorophenol	*3.60*		mg/kg wet	*5.000*		*72*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.68*		mg/kg wet	*3.333*		*80*	*30-130*			
Surrogate: Phenol-d6	*3.78*		mg/kg wet	*5.000*		*76*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.99*		mg/kg wet	*3.333*		*90*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.83	0.333	mg/kg wet	3.333		85	40-140	0.9	30	
1,2-Dichlorobenzene	2.55	0.333	mg/kg wet	3.333		76	40-140	2	30	
1,3-Dichlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140	2	30	
1,4-Dichlorobenzene	2.54	0.333	mg/kg wet	3.333		76	40-140	1	30	
2,4,5-Trichlorophenol	3.25	0.333	mg/kg wet	3.333		97	30-130	0.3	30	
2,4,6-Trichlorophenol	3.27	0.333	mg/kg wet	3.333		98	30-130	2	30	
2,4-Dichlorophenol	2.93	0.333	mg/kg wet	3.333		88	30-130	1	30	
2,4-Dimethylphenol	2.65	0.333	mg/kg wet	3.333		79	30-130	0.8	30	
2,4-Dinitrophenol	3.70	1.67	mg/kg wet	3.333		111	30-130	1	30	
2,4-Dinitrotoluene	3.00	0.333	mg/kg wet	3.333		90	40-140	3	30	
2,6-Dinitrotoluene	2.85	0.333	mg/kg wet	3.333		86	40-140	0.9	30	
2-Chloronaphthalene	2.53	0.333	mg/kg wet	3.333		76	40-140	0.8	30	
2-Chlorophenol	2.48	0.333	mg/kg wet	3.333		74	30-130	1	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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ESS Laboratory Work Order: 1712171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71119 - 3546										
2-Methylnaphthalene	2.68	0.333	mg/kg wet	3.333		80	40-140	1	30	
2-Methylphenol	2.55	0.333	mg/kg wet	3.333		76	30-130	15	30	
2-Nitrophenol	2.84	0.333	mg/kg wet	3.333		85	30-130	0.2	30	
3,3´-Dichlorobenzidine	2.28	0.667	mg/kg wet	3.333		69	40-140	5	30	
3+4-Methylphenol	5.16	0.667	mg/kg wet	6.667		77	30-130	2	30	
4-Bromophenyl-phenylether	3.17	0.333	mg/kg wet	3.333		95	40-140	2	30	
4-Chloroaniline	1.83	0.667	mg/kg wet	3.333		55	40-140	9	30	
4-Nitrophenol	2.61	1.67	mg/kg wet	3.333		78	30-130	3	30	
Acenaphthene	2.76	0.333	mg/kg wet	3.333		83	40-140	0.01	30	
Acenaphthylene	2.64	0.333	mg/kg wet	3.333		79	40-140	0.2	30	
Acetophenone	2.43	0.667	mg/kg wet	3.333		73	40-140	2	30	
Aniline	1.48	1.67	mg/kg wet	3.333		44	40-140	8	30	
Anthracene	2.99	0.333	mg/kg wet	3.333		90	40-140	0.3	30	
Azobenzene	2.45	0.333	mg/kg wet	3.333		74	40-140	4	30	
Benzo(a)anthracene	2.75	0.333	mg/kg wet	3.333		82	40-140	0.7	30	
Benzo(a)pyrene	2.88	0.167	mg/kg wet	3.333		86	40-140	2	30	
Benzo(b)fluoranthene	2.89	0.333	mg/kg wet	3.333		87	40-140	0.6	30	
Benzo(g,h,i)perylene	3.30	0.333	mg/kg wet	3.333		99	40-140	0.4	30	
Benzo(k)fluoranthene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
bis(2-Chloroethoxy)methane	2.46	0.333	mg/kg wet	3.333		74	40-140	1	30	
bis(2-Chloroethyl)ether	2.33	0.333	mg/kg wet	3.333		70	40-140	1	30	
bis(2-chloroisopropyl)Ether	2.36	0.333	mg/kg wet	3.333		71	40-140	2	30	
bis(2-Ethylhexyl)phthalate	3.32	0.333	mg/kg wet	3.333		100	40-140	1	30	
Butylbenzylphthalate	3.10	0.333	mg/kg wet	3.333		93	40-140	0.9	30	
Chrysene	2.99	0.167	mg/kg wet	3.333		90	40-140	0.6	30	
Dibenzo(a,h)Anthracene	3.25	0.167	mg/kg wet	3.333		97	40-140	0.8	30	
Dibenzofuran	2.68	0.333	mg/kg wet	3.333		80	40-140	3	30	
Diethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140	2	30	
Dimethylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140	0.1	30	
Di-n-butylphthalate	3.24	0.333	mg/kg wet	3.333		97	40-140	0.8	30	
Di-n-octylphthalate	3.39	0.333	mg/kg wet	3.333		102	40-140	0.1	30	
Fluoranthene	3.18	0.333	mg/kg wet	3.333		95	40-140	0.2	30	
Fluorene	2.99	0.333	mg/kg wet	3.333		90	40-140	2	30	
Hexachlorobenzene	3.20	0.333	mg/kg wet	3.333		96	40-140	2	30	
Hexachlorobutadiene	2.98	0.333	mg/kg wet	3.333		89	40-140	0.4	30	
Hexachloroethane	2.48	0.333	mg/kg wet	3.333		74	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	3.25	0.333	mg/kg wet	3.333		98	40-140	0.7	30	
Isophorone	2.26	0.333	mg/kg wet	3.333		68	40-140	0.07	30	
Naphthalene	2.64	0.333	mg/kg wet	3.333		79	40-140	0.7	30	
Nitrobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	1	30	
N-Nitrosodimethylamine	2.21	0.333	mg/kg wet	3.333		66	40-140	18	30	
Pentachlorophenol	3.55	1.67	mg/kg wet	3.333		107	30-130	8	30	
Phenanthrene	2.88	0.333	mg/kg wet	3.333		87	40-140	0.6	30	
Phenol	2.36	0.333	mg/kg wet	3.333		71	30-130	4	30	
Pyrene	2.88	0.333	mg/kg wet	3.333		86	40-140	1	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71119 - 3546										
Pyridine	1.65	1.67	mg/kg wet	3.333		50	40-140	6	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.45*		mg/kg wet	*3.333*		*74*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*5.10*		mg/kg wet	*5.000*		*102*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.85*		mg/kg wet	*5.000*		*77*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.81*		mg/kg wet	*3.333*		*84*	*30-130*			
Surrogate: 2-Fluorophenol	*3.50*		mg/kg wet	*5.000*		*70*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.64*		mg/kg wet	*3.333*		*79*	*30-130*			
Surrogate: Phenol-d6	*3.66*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.01*		mg/kg wet	*3.333*		*90*	*30-130*			
Batch CL71211 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71211 - 3546										
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.40*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.53*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.64*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.52*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: 2-Fluorophenol	*3.34*		mg/kg wet	*5.000*		*67*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.47*		mg/kg wet	*3.333*		*74*	*30-130*			
Surrogate: Phenol-d6	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.03*		mg/kg wet	*3.333*		*91*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140			
1,2-Dichlorobenzene	2.47	0.333	mg/kg wet	3.333		74	40-140			
1,3-Dichlorobenzene	2.47	0.333	mg/kg wet	3.333		74	40-140			
1,4-Dichlorobenzene	2.45	0.333	mg/kg wet	3.333		74	40-140			
2,4,5-Trichlorophenol	2.87	0.333	mg/kg wet	3.333		86	30-130			
2,4,6-Trichlorophenol	2.81	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dichlorophenol	2.85	0.333	mg/kg wet	3.333		86	30-130			
2,4-Dimethylphenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
2,4-Dinitrophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
2,4-Dinitrotoluene	2.99	0.333	mg/kg wet	3.333		90	40-140			
2,6-Dinitrotoluene	2.72	0.333	mg/kg wet	3.333		82	40-140			
2-Chloronaphthalene	2.25	0.333	mg/kg wet	3.333		68	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71211 - 3546										
2-Chlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130			
2-Methylnaphthalene	2.63	0.333	mg/kg wet	3.333		79	40-140			
2-Methylphenol	2.53	0.333	mg/kg wet	3.333		76	30-130			
2-Nitrophenol	2.71	0.333	mg/kg wet	3.333		81	30-130			
3,3´-Dichlorobenzidine	2.47	0.667	mg/kg wet	3.333		74	40-140			
3+4-Methylphenol	5.12	0.667	mg/kg wet	6.667		77	30-130			
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140			
4-Chloroaniline	1.95	0.667	mg/kg wet	3.333		59	40-140			
4-Nitrophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
Acenaphthene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Acenaphthylene	2.48	0.333	mg/kg wet	3.333		74	40-140			
Acetophenone	2.35	0.667	mg/kg wet	3.333		70	40-140			
Aniline	1.50	1.67	mg/kg wet	3.333		45	40-140			
Anthracene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Azobenzene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Benzo(a)anthracene	2.67	0.333	mg/kg wet	3.333		80	40-140			
Benzo(a)pyrene	2.77	0.167	mg/kg wet	3.333		83	40-140			
Benzo(b)fluoranthene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Benzo(g,h,i)perylene	3.23	0.333	mg/kg wet	3.333		97	40-140			
Benzo(k)fluoranthene	2.86	0.333	mg/kg wet	3.333		86	40-140			
bis(2-Chloroethoxy)methane	2.39	0.333	mg/kg wet	3.333		72	40-140			
bis(2-Chloroethyl)ether	2.20	0.333	mg/kg wet	3.333		66	40-140			
bis(2-chloroisopropyl)Ether	2.27	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Ethylhexyl)phthalate	3.38	0.333	mg/kg wet	3.333		101	40-140			
Butylbenzylphthalate	3.17	0.333	mg/kg wet	3.333		95	40-140			
Chrysene	2.93	0.167	mg/kg wet	3.333		88	40-140			
Dibenzo(a,h)Anthracene	3.27	0.167	mg/kg wet	3.333		98	40-140			
Dibenzofuran	2.53	0.333	mg/kg wet	3.333		76	40-140			
Diethylphthalate	2.95	0.333	mg/kg wet	3.333		88	40-140			
Dimethylphthalate	2.79	0.333	mg/kg wet	3.333		84	40-140			
Di-n-butylphthalate	3.16	0.333	mg/kg wet	3.333		95	40-140			
Di-n-octylphthalate	3.38	0.333	mg/kg wet	3.333		102	40-140			
Fluoranthene	3.05	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.79	0.333	mg/kg wet	3.333		84	40-140			
Hexachlorobenzene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Hexachlorobutadiene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Hexachloroethane	2.39	0.333	mg/kg wet	3.333		72	40-140			
Indeno(1,2,3-cd)Pyrene	3.27	0.333	mg/kg wet	3.333		98	40-140			
Isophorone	2.18	0.333	mg/kg wet	3.333		66	40-140			
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Nitrobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140			
N-Nitrosodimethylamine	1.85	0.333	mg/kg wet	3.333		56	40-140			
Pentachlorophenol	3.02	1.67	mg/kg wet	3.333		91	30-130			
Phenanthrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Phenol	2.27	0.333	mg/kg wet	3.333		68	30-130			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71211 - 3546										
Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.49*		mg/kg wet	*3.333*		*75*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.96*		mg/kg wet	*5.000*		*99*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.86*		mg/kg wet	*5.000*		*77*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.56*		mg/kg wet	*3.333*		*77*	*30-130*			
Surrogate: 2-Fluorophenol	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.60*		mg/kg wet	*3.333*		*78*	*30-130*			
Surrogate: Phenol-d6	*3.65*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.12*		mg/kg wet	*3.333*		*94*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.66	0.333	mg/kg wet	3.333		80	40-140	2	30	
1,2-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	5	30	
1,3-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	5	30	
1,4-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	4	30	
2,4,5-Trichlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130	1	30	
2,4,6-Trichlorophenol	2.87	0.333	mg/kg wet	3.333		86	30-130	2	30	
2,4-Dichlorophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	6	30	
2,4-Dimethylphenol	2.55	0.333	mg/kg wet	3.333		76	30-130	0.4	30	
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		80	30-130	3	30	
2,4-Dinitrotoluene	2.83	0.333	mg/kg wet	3.333		85	40-140	6	30	
2,6-Dinitrotoluene	2.63	0.333	mg/kg wet	3.333		79	40-140	3	30	
2-Chloronaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	1	30	
2-Chlorophenol	2.29	0.333	mg/kg wet	3.333		69	30-130	3	30	
2-Methylnaphthalene	2.50	0.333	mg/kg wet	3.333		75	40-140	5	30	
2-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130	1	30	
2-Nitrophenol	2.63	0.333	mg/kg wet	3.333		79	30-130	3	30	
3,3´-Dichlorobenzidine	2.44	0.667	mg/kg wet	3.333		73	40-140	0.9	30	
3+4-Methylphenol	4.82	0.667	mg/kg wet	6.667		72	30-130	6	30	
4-Bromophenyl-phenylether	2.91	0.333	mg/kg wet	3.333		87	40-140	0.6	30	
4-Chloroaniline	1.84	0.667	mg/kg wet	3.333		55	40-140	6	30	
4-Nitrophenol	2.39	1.67	mg/kg wet	3.333		72	30-130	5	30	
Acenaphthene	2.48	0.333	mg/kg wet	3.333		74	40-140	4	30	
Acenaphthylene	2.35	0.333	mg/kg wet	3.333		71	40-140	5	30	
Acetophenone	2.24	0.667	mg/kg wet	3.333		67	40-140	5	30	
Aniline	1.41	1.67	mg/kg wet	3.333		42	40-140	6	30	
Anthracene	2.78	0.333	mg/kg wet	3.333		83	40-140	2	30	
Azobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	1	30	
Benzo(a)anthracene	2.64	0.333	mg/kg wet	3.333		79	40-140	1	30	
Benzo(a)pyrene	2.75	0.167	mg/kg wet	3.333		82	40-140	0.6	30	
Benzo(b)fluoranthene	2.58	0.333	mg/kg wet	3.333		78	40-140	0.6	30	
Benzo(g,h,i)perylene	3.24	0.333	mg/kg wet	3.333		97	40-140	0.3	30	
Benzo(k)fluoranthene	2.84	0.333	mg/kg wet	3.333		85	40-140	0.7	30	
bis(2-Chloroethoxy)methane	2.30	0.333	mg/kg wet	3.333		69	40-140	4	30	
bis(2-Chloroethyl)ether	2.14	0.333	mg/kg wet	3.333		64	40-140	3	30	
bis(2-chloroisopropyl)Ether	2.22	0.333	mg/kg wet	3.333		67	40-140	2	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71211 - 3546										
bis(2-Ethylhexyl)phthalate	3.29	0.333	mg/kg wet	3.333		99	40-140	3	30	
Butylbenzylphthalate	2.97	0.333	mg/kg wet	3.333		89	40-140	7	30	
Chrysene	2.88	0.167	mg/kg wet	3.333		87	40-140	2	30	
Dibenzo(a,h)Anthracene	3.23	0.167	mg/kg wet	3.333		97	40-140	1	30	
Dibenzofuran	2.44	0.333	mg/kg wet	3.333		73	40-140	4	30	
Diethylphthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	5	30	
Dimethylphthalate	2.69	0.333	mg/kg wet	3.333		81	40-140	4	30	
Di-n-butylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	3	30	
Di-n-octylphthalate	3.20	0.333	mg/kg wet	3.333		96	40-140	6	30	
Fluoranthene	2.95	0.333	mg/kg wet	3.333		88	40-140	3	30	
Fluorene	2.72	0.333	mg/kg wet	3.333		82	40-140	3	30	
Hexachlorobenzene	3.01	0.333	mg/kg wet	3.333		90	40-140	1	30	
Hexachlorobutadiene	2.78	0.333	mg/kg wet	3.333		83	40-140	2	30	
Hexachloroethane	2.31	0.333	mg/kg wet	3.333		69	40-140	3	30	
Indeno(1,2,3-cd)Pyrene	3.22	0.333	mg/kg wet	3.333		97	40-140	1	30	
Isophorone	2.13	0.333	mg/kg wet	3.333		64	40-140	2	30	
Naphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	4	30	
Nitrobenzene	2.34	0.333	mg/kg wet	3.333		70	40-140	0.4	30	
N-Nitrosodimethylamine	1.74	0.333	mg/kg wet	3.333		52	40-140	6	30	
Pentachlorophenol	3.11	1.67	mg/kg wet	3.333		93	30-130	3	30	
Phenanthrene	2.70	0.333	mg/kg wet	3.333		81	40-140	2	30	
Phenol	2.16	0.333	mg/kg wet	3.333		65	30-130	5	30	
Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140	6	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.32*		mg/kg wet	*3.333*		*70*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.81*		mg/kg wet	*5.000*		*96*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.64*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.57*		mg/kg wet	*3.333*		*77*	*30-130*			
Surrogate: 2-Fluorophenol	*3.25*		mg/kg wet	*5.000*		*65*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.49*		mg/kg wet	*3.333*		*75*	*30-130*			
Surrogate: Phenol-d6	*3.38*		mg/kg wet	*5.000*		*68*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.96*		mg/kg wet	*3.333*		*89*	*30-130*			
Classical Chemistry										
Batch CL71536 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	100	mg/kg							
Total Organic Carbon (2)	ND	100	mg/kg							
Total Organic Carbon (Average)	ND	100	mg/kg dry wt							
LCS										
Total Organic Carbon (1)	11200	100	mg/kg	10000		112	80-120			
Total Organic Carbon (2)	10600	100	mg/kg	10000		106	80-120			
Total Organic Carbon (Average)	10900	100	mg/kg dry wt							
LCS Dup										
Total Organic Carbon (1)	10900	100	mg/kg	10000		109	80-120	3	200	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CL71536 - General Preparation										
Total Organic Carbon (2)	10600	100	mg/kg	10000		106	80-120	0.8	200	
Total Organic Carbon (Average)	10800	100	mg/kg dry wt							
Reference										
Total Organic Carbon (Average)	1.50		mg/kg dry wt							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712171

Notes and Definitions

Z-09	ND
Z-08	See Attached
XH	Peaks found in the retention time window for MCPP did not confirm by GC/MS.
U	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
RRF	Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration
Q	Calibration required quadratic regression (Q).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
#	Modified result
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

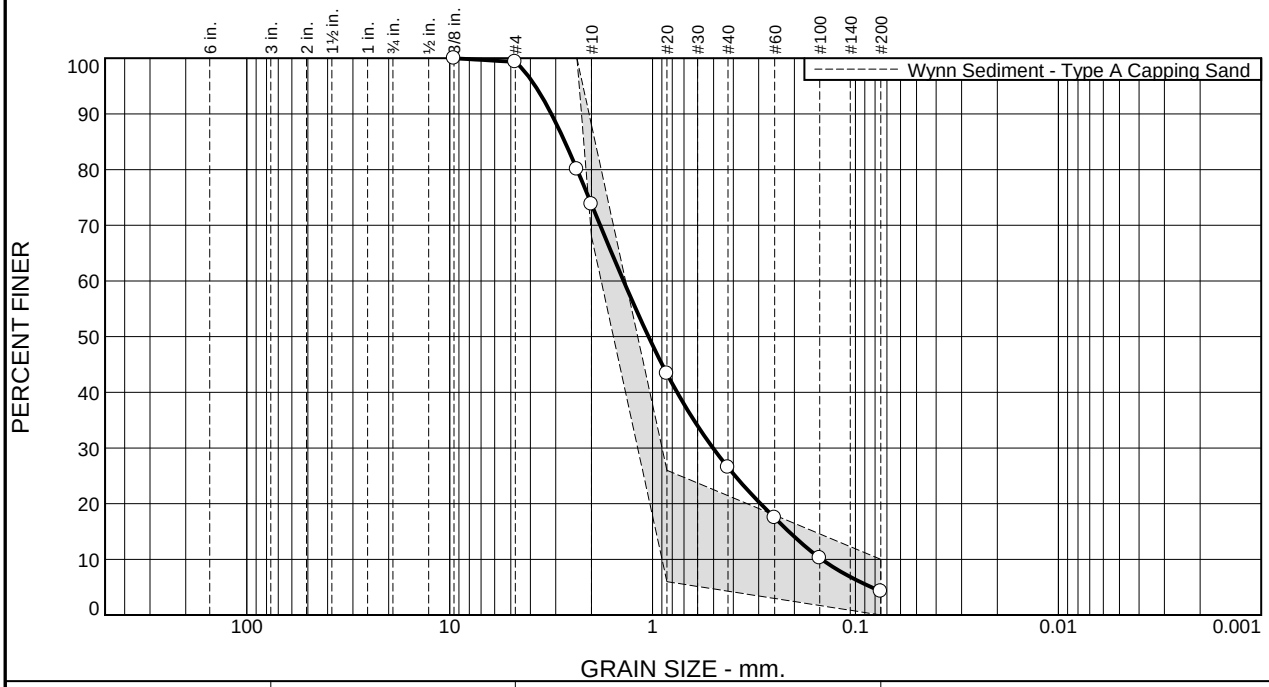
THIELSCH ENGINEERING	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 http://www.thielsch.com	Client Information: Charter Contracting Boston, MA PM: Marc Levesque Assigned By: Marc Levesque	Laboratory Information Project Name: **Wynn Boston Harbor Sediment Remediation** **Boston, MA** ESS Project Number: 1712171 Report Date: 12.07.17

LABORATORY TESTING DATA SHEET

Boring ID	ESS Sample No.	Depth (ft)	CTS Laboratory No.	Identification Tests							Density		Strength Tests				
				Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Setup as % of Proctor	CBR Dry unit wt. pcf	CBR Water Content %	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
Type A - Capping Sand - 015	1712171-01	Stock	17-S-1916	4.4			0.7	95.1	4.2								Brown well graded sand (SW)
Type A - Capping Sand - 016	1712171-02	Stock	17-S-1917	3.7			1.9	94.6	3.5								Brown well graded sand (SW)
Type A - Capping Sand - 017	1712171-03	Stock	17-S-1918	3.4			1.8	94.5	3.7								Brown well graded sand (SW)
Type A - Capping Sand - 018	1712171-04	Stock	17-S-1919	2.9			2.1	94.6	3.3								Brown well graded sand (SW)
Type A - Capping Sand - 019	1712171-05	Stock	17-S-1920	3.3			1.3	95.1	3.6								Brown well graded sand (SW)
Type C - Capping Sand - 009	1712171-06	Stock	17-S-1921	9.8			2.7	41.7	55.6								Gray sandy silt (ML)
Type C - Capping Sand - 010	1712171-07	Stock	17-S-1922	11.4			1.0	41.9	57.1								Gray sandy silt (ML)
Type C - Capping Sand - 011	1712171-08	Stock	17-S-1923	9.6			0.9	45.5	53.6								Gray sandy silt (ML)
Type C - Capping Sand - 012	1712171-09	Stock	17-S-1924	10.4			1.0	44.6	54.4								Gray sandy silt (ML)
Type C - Capping Sand - 013	1712171-10	Stock	17-S-1925	8.8			1.2	45.3	53.5								Gray sandy silt (ML)

Reviewed By _____ Date Reviewed: *12.07.17*

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	25.5	47.3	22.3	4.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.3		
#8	80.1	100.0	X
#10	73.8	68.0 - 88.0	
#20	43.4	6.0 - 26.0	X
#40	26.5		
#60	17.4		
#100	10.2		
#200	4.2	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.1526 D_{85}= 2.7064 D_{60}= 1.3895
D_{50}= 1.0470 D_{30}= 0.5038 D_{15}= 0.2131
D_{10}= 0.1469 C_u= 9.46 C_c= 1.24

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

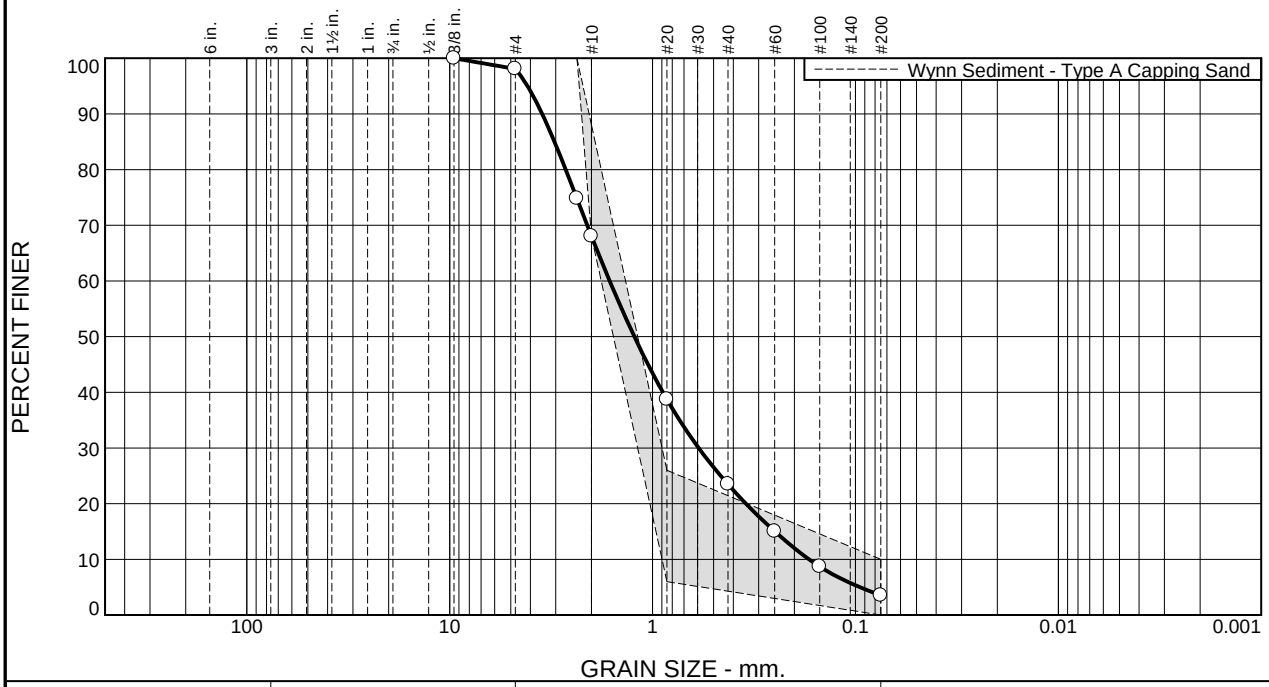
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 015

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	30.0	44.6	20.0	3.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.1		
#8	74.8	100.0	X
#10	68.1	68.0 - 88.0	
#20	38.7	6.0 - 26.0	X
#40	23.5		
#60	15.0		
#100	8.7		
#200	3.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4985 D_{85}= 3.0436 D_{60}= 1.6269
D_{50}= 1.2292 D_{30}= 0.5927 D_{15}= 0.2495
D_{10}= 0.1696 C_u= 9.59 C_c= 1.27

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

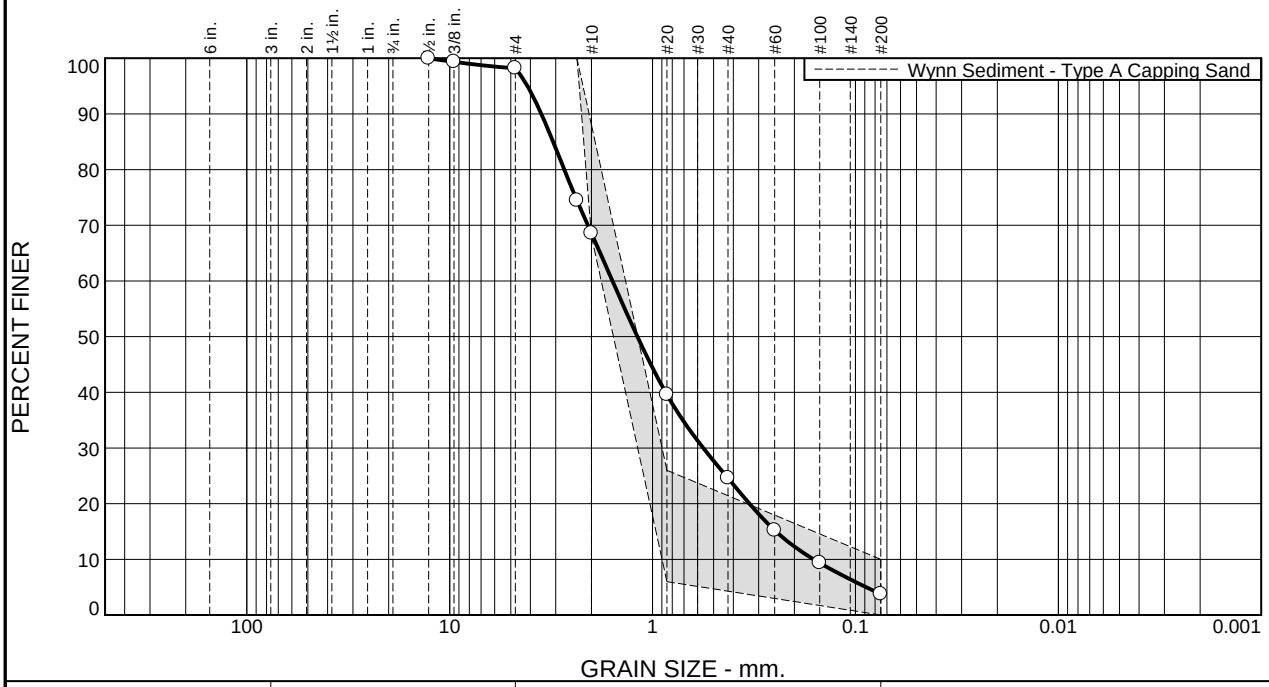
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 016

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-02

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.8	29.6	44.0	20.9	3.7	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.3		
#4	98.2		
#8	74.5	100.0	X
#10	68.6	68.0 - 88.0	
#20	39.6	6.0 - 26.0	X
#40	24.6		
#60	15.2		
#100	9.4		
#200	3.7	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.5329 D_{85}= 3.0911 D_{60}= 1.5763
D_{50}= 1.1876 D_{30}= 0.5626 D_{15}= 0.2465
D_{10}= 0.1607 C_u= 9.81 C_c= 1.25

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

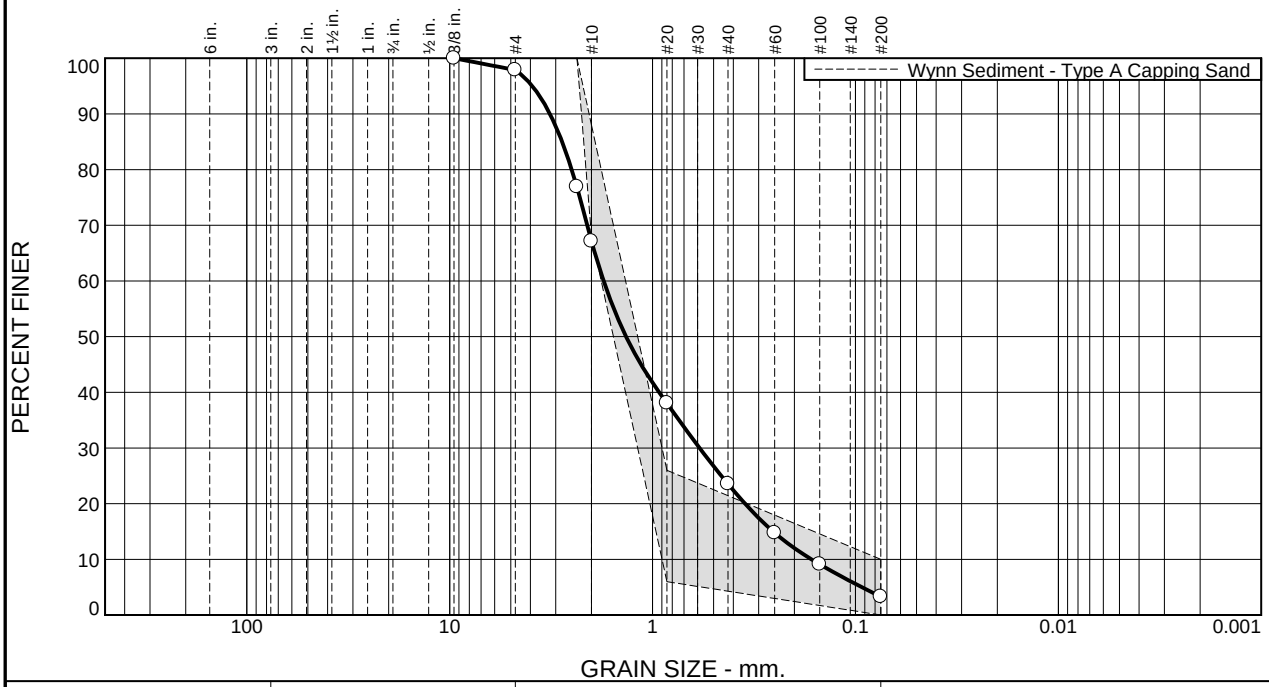
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 017

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-03

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	30.8	43.6	20.2	3.3	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	97.9		
#8	76.9	100.0	X
#10	67.1	68.0 - 88.0	X
#20	38.0	6.0 - 26.0	X
#40	23.5		
#60	14.8		
#100	9.1		
#200	3.3	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.2036 D_{85}= 2.7901 D_{60}= 1.7423
D_{50}= 1.3511 D_{30}= 0.5865 D_{15}= 0.2545
D_{10}= 0.1648 C_u= 10.57 C_c= 1.20

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

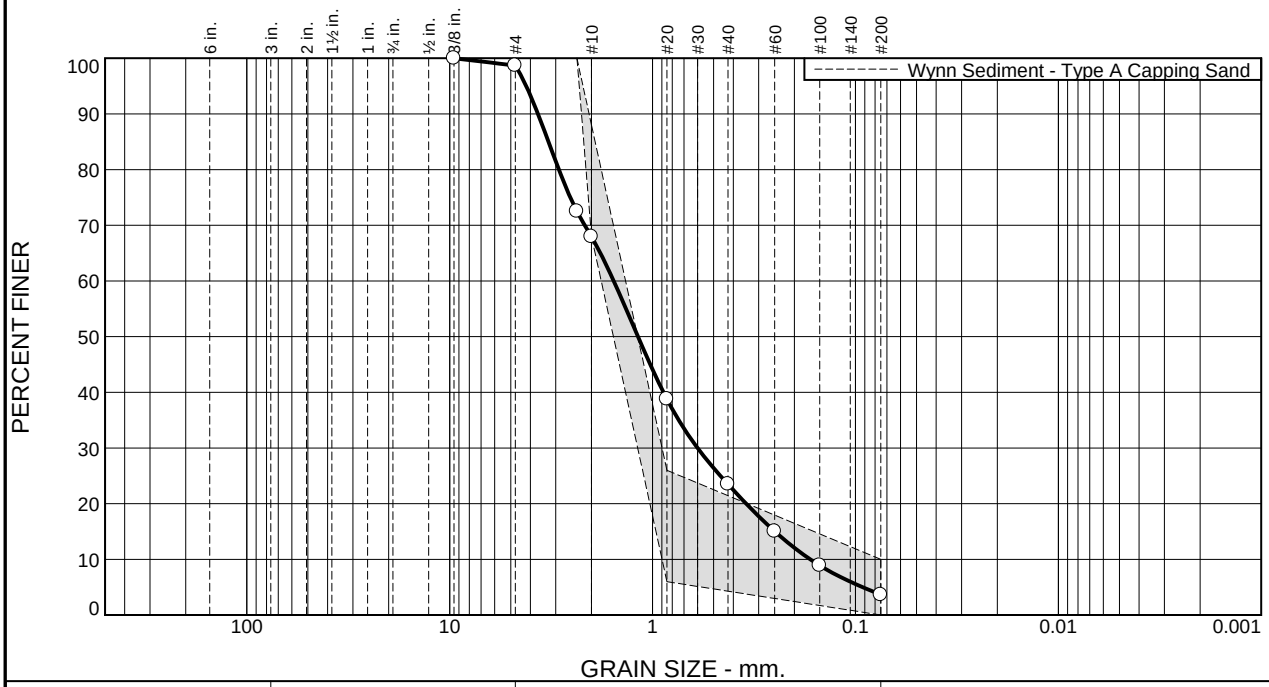
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 018

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-04

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	30.7	44.5	19.9	3.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.7		
#8	72.5	100.0	X
#10	68.0	68.0 - 88.0	
#20	38.8	6.0 - 26.0	X
#40	23.5		
#60	15.0		
#100	8.9		
#200	3.6	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.6712 D_{85}= 3.2584 D_{60}= 1.5546
D_{50}= 1.1799 D_{30}= 0.6003 D_{15}= 0.2495
D_{10}= 0.1671 C_u= 9.30 C_c= 1.39

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

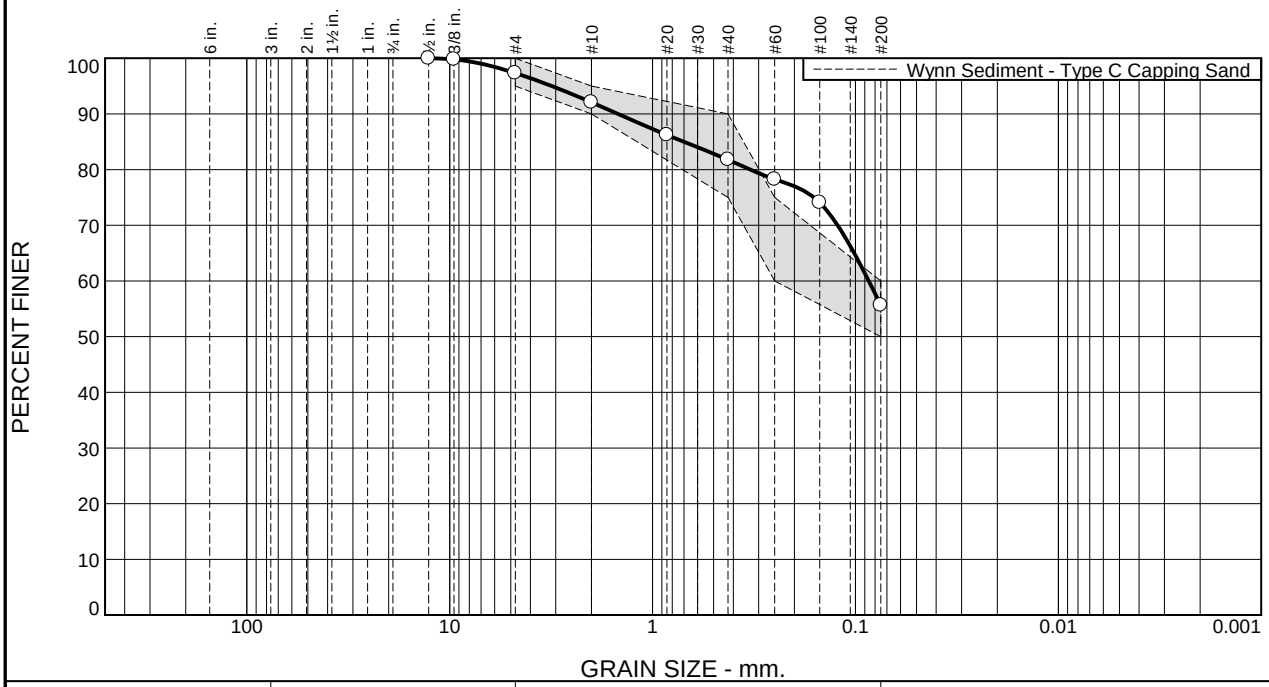
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 019

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-05

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.7	5.2	10.3	26.2	55.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.8		
#4	97.3	95.0 - 100.0	
#10	92.1	90.0 - 95.0	
#20	86.2		
#40	81.8	75.0 - 90.0	
#60	78.3	60.0 - 75.0	X
#100	74.1		
#200	55.6	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.4805 D_{85}= 0.7022 D_{60}= 0.0860
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

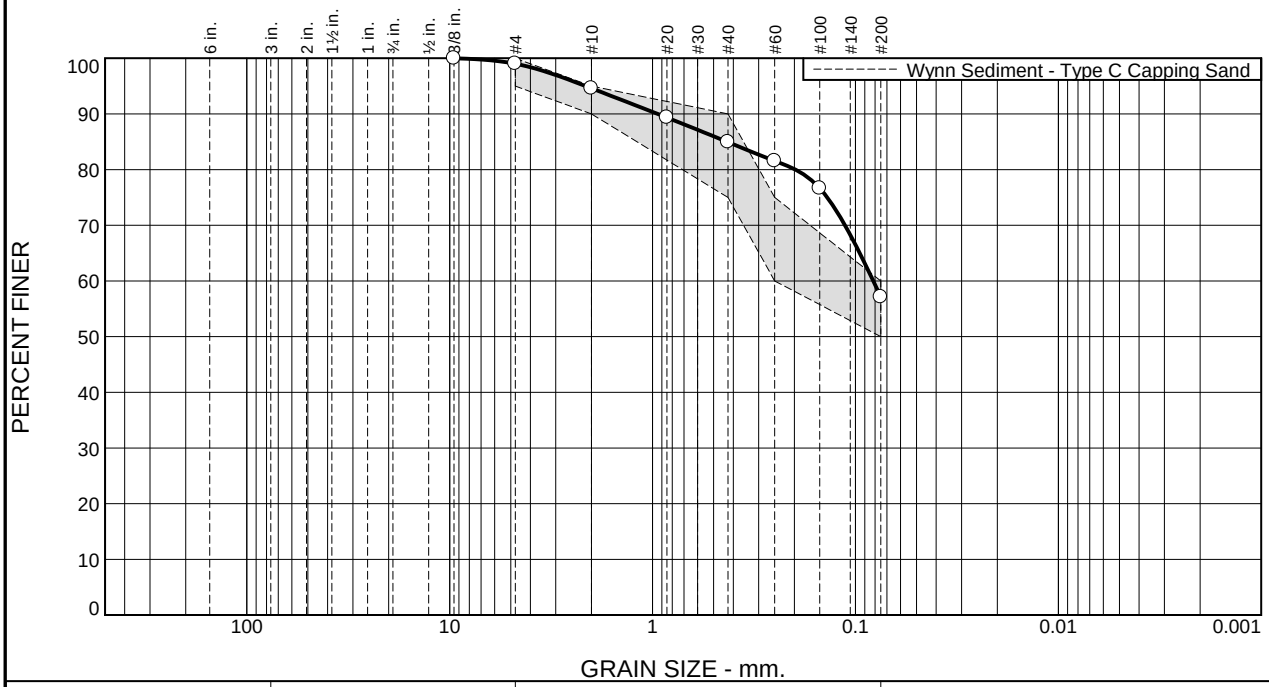
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 009

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-06

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	4.4	9.7	27.8	57.1	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.0	95.0 - 100.0	
#10	94.6	90.0 - 95.0	
#20	89.4		
#40	84.9	75.0 - 90.0	
#60	81.6	60.0 - 75.0	X
#100	76.6		
#200	57.1	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 0.9433 D_{85}= 0.4295 D_{60}= 0.0817
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

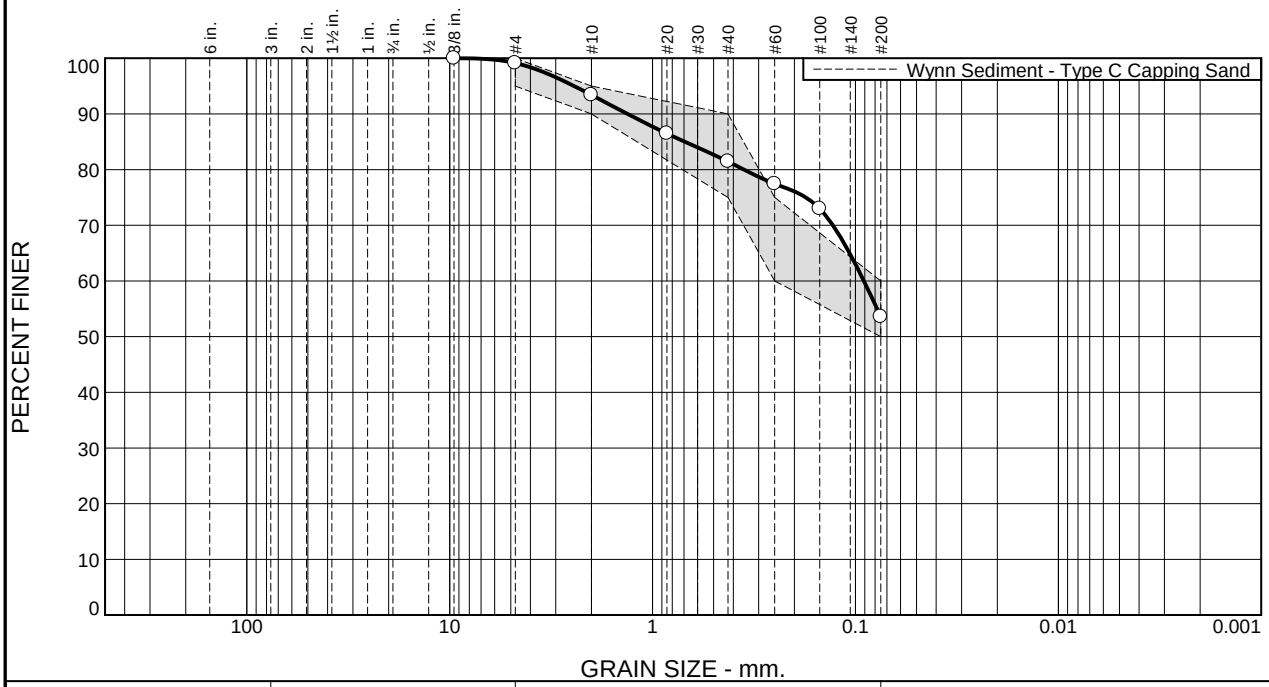
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 010

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-07

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	5.7	11.9	27.9	53.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.1	95.0 - 100.0	
#10	93.4	90.0 - 95.0	
#20	86.5		
#40	81.5	75.0 - 90.0	
#60	77.4	60.0 - 75.0	X
#100	73.0		
#200	53.6	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.3287 D_{85}= 0.6934 D_{60}= 0.0910
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

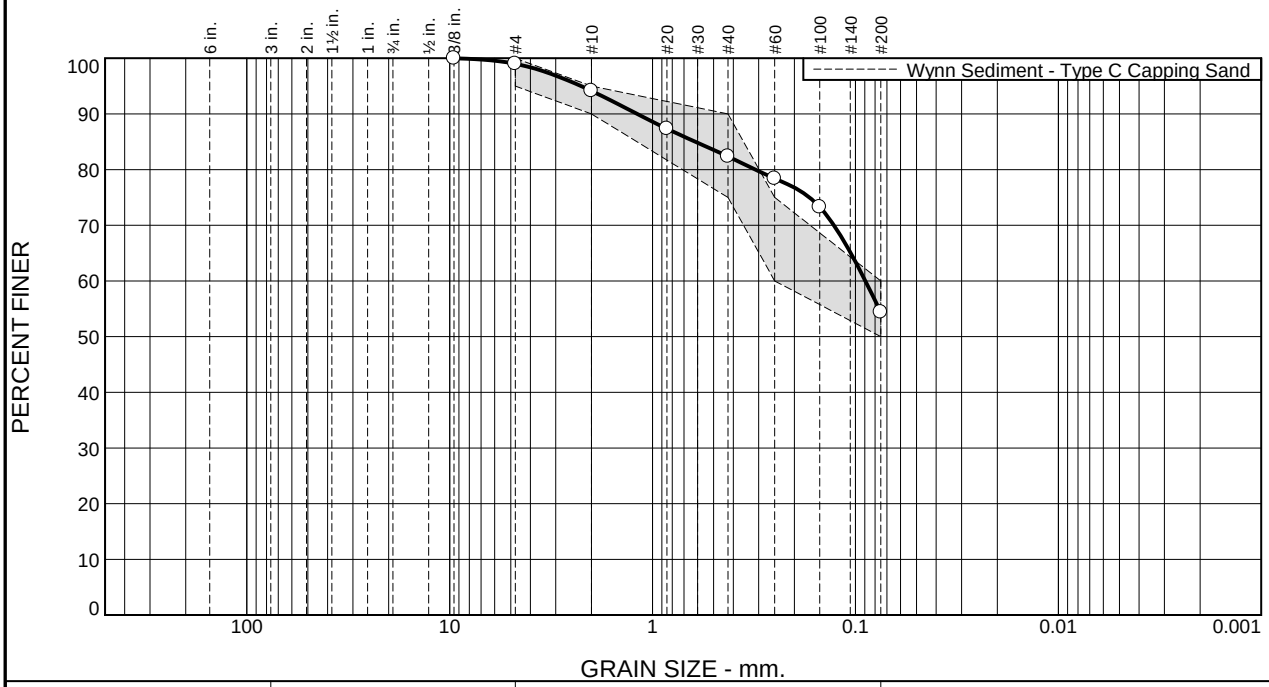
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 011

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-08

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	4.9	11.7	28.0	54.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.0	95.0 - 100.0	
#10	94.1	90.0 - 95.0	
#20	87.3		
#40	82.4	75.0 - 90.0	
#60	78.4	60.0 - 75.0	X
#100	73.3		
#200	54.4	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.1908 D_{85}= 0.6151 D_{60}= 0.0894
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

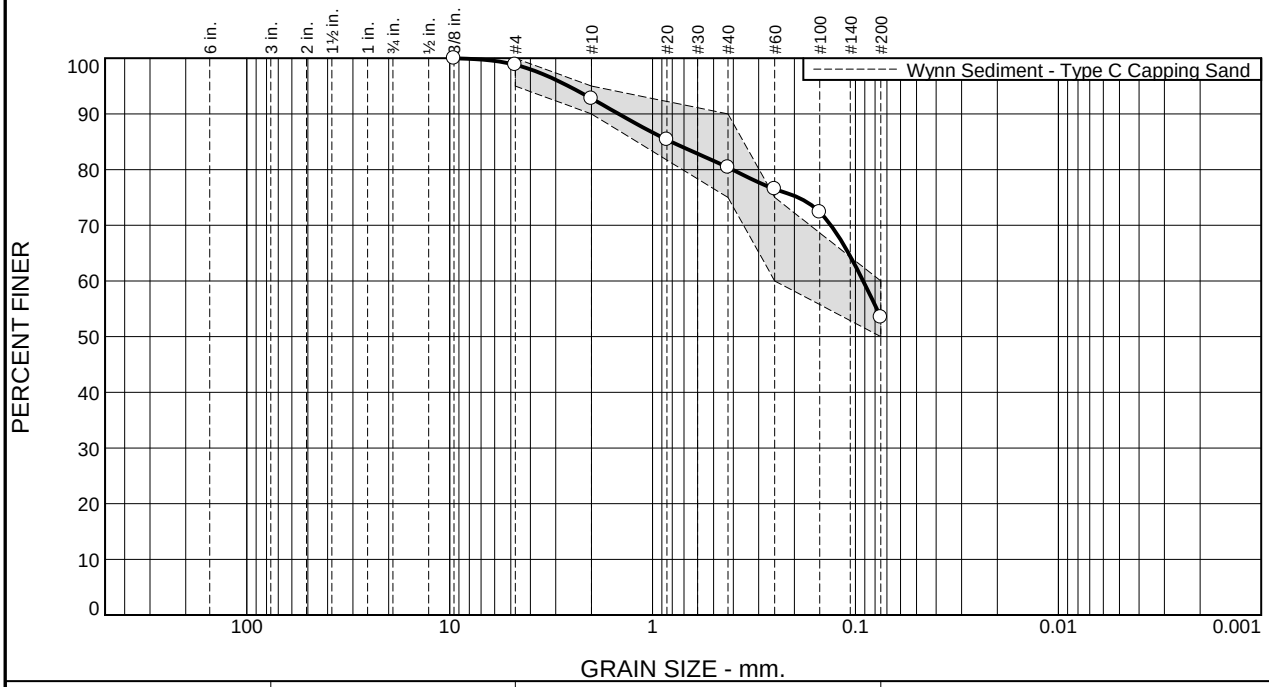
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 012

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-09

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	6.0	12.4	26.9	53.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.8	95.0 - 100.0	
#10	92.8	90.0 - 95.0	
#20	85.4		
#40	80.4	75.0 - 90.0	
#60	76.5	60.0 - 75.0	X
#100	72.4		
#200	53.5	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.4687 D_{85}= 0.8101 D_{60}= 0.0917
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 013

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-10

SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
ESS Project No. 1712171
Project Manager Marc Levesque
Date Received 12/7/2017 (by)

Client Company Charter
Client Email
Site Location
Date Assigned 12/7/2017

Collected By
Date Required 12/12/2017

Sample Information				Lab No.	Identification Tests								Permeability		Compaction			Soil Strength			Consol.		Notes
Boring/ Test Pit No.	Sample or depth	Sample date	ESS Sample ID		Water Cont. %	LL & PL %	Org. %	Bulk	Sieve -200 %	Hyd -2μ %	G_s	Tube Den-sity	Sand	Clay	Mod.	Std.	CBR	Un-con-fined	UU	CIU	Stand ard	E.O.P.	
					D2216	D4318	D2974		D422		D854		D2434	D5084	D1557	D698	D1883	D2166	D2850	D4767	D2435	D2435	#
Type A - Capping Sand - 015		12/7/17	1712171-01		X				X														**
Type A - Capping Sand - 016		12/7/17	1712171-02		X				X														**
Type A - Capping Sand - 017		12/7/17	1712171-03		X				X														**
Type A - Capping Sand - 018		12/7/17	1712171-04		X				X														**
Type A - Capping Sand - 019		12/7/17	1712171-05		X				X														**
Type C - Capping Sand - 009		12/7/17	1712171-06		X				X														**
Type C - Capping Sand - 010		12/7/17	1712171-07		X				X														**
Type C - Capping Sand - 011		12/7/17	1712171-08		X				X														**
Type C - Capping Sand - 012		12/7/17	1712171-09		X				X														**
Type C - Capping Sand - 013		12/7/17	1712171-10		X				X														**

Notes: ** = D2487 Material Classification

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Prepared Date:

December 21, 2017

Report Information:

Pace Project #: 10414063
Sample Receipt Date: 12/12/2017
Client Project #: 1712171
Client Sub PO #: B02407
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:

Joanne Richardson

December 21, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on ten samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 35-87%. Except for eight low values, which were flagged "R" on the results tables, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blanks to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batches using clean reference matrix or sample matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 83-104% with relative percent differences of 0.6-13.3%. These results were within the target ranges for the method. Matrix spikes were prepared with the 12/13/2017 extraction batch using sample material from a separate project; results from these analyses will be provided upon request.

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

10414063

ESS Laboratory PACE

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1712171

Turn Time ___ Standard Other **DUE 12/20/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

MA-MCP Navy USACE CT DEP Other_____

Electonic Deliverables *Excel Access *PDF

Co. Name: ESS Laboratory	Project #:	Project Name: 1712171	
Contact Person: Shawn Morrell	Proj. Location:		
Address: ext 3083	City , State:	Zip:	PO #: B02407
Tel.	email: smorrell@thielsch.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: Dioxin EPA 8290								
	12/7/17	1210	G	S	1712171-01	1	1	AG		X						001		
	12/7/17	1213	G	S	1712171-02	1	1	AG		X						002		
	12/7/17	1216	G	S	1712171-03	1	1	AG		X						003		
	12/7/17	1219	G	S	1712171-04	1	1	AG		X						004		
	12/7/17	1225	G	S	1712171-05	1	1	AG		X						005		
	12/7/17	1228	G	S	1712171-06	1	1	AG		X						006		
	12/7/17	1232	G	S	1712171-07	1	1	AG		X						007		
	12/7/17	1236	G	S	1712171-08	1	1	AG		X						008		
	12/7/17	1240	G	S	1712171-09	1	1	AG		X						009		
	12/7/17	1244	G	S	1712171-10	1	1	AG		X						010		

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA: X

Cooler Temperature: 4.0

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time) 12/12/17 800 T=4.0	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 30Aug2017 Page 1 of 2
	Document No.: **F-MN-L-213-rev.21**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: ESS Laboratory

Project #: WO#: 10414063

10414063

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 1Z037 497 1545 4356 77

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☑ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.9 **Cooler Temp Corrected (°C):** 4.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** ME 12/12/17

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present?	☑ Yes ☐ No	1.
Chain of Custody Filled Out?	☑ Yes ☐ No	2.
Chain of Custody Relinquished?	☐ Yes ☑ No	3.
Sampler Name and/or Signature on COC?	☐ Yes ☑ No ☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes ☐ No	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes ☑ No	6.
Rush Turn Around Time Requested?	☐ Yes ☑ No	7.
Sufficient Volume?	☑ Yes ☐ No	8.
Correct Containers Used?	☑ Yes ☐ No	9.
-Pace Containers Used?	☐ Yes ☑ No	
Containers Intact?	☑ Yes ☐ No	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes ☐ No ☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☑ Yes ☐ No	12.
All containers needing acid/base preservation have been checked?	☐ Yes ☐ No ☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes ☐ No ☑ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☐ Yes ☐ No ☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes ☐ No ☑ N/A	14.
Trip Blank Present?	☐ Yes ☐ No ☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes ☐ No ☑ N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Joanne Richardson **Date:** 12-12-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-01			
Lab Sample ID	10414063001			
Filename	U171216B_10			
Injected By	BAL			
Total Amount Extracted	11.6 g	Matrix	Solid	
% Moisture	4.2	Dilution	NA	
Dry Weight Extracted	11.1 g	Collected	12/07/2017	12:10
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/16/2017	20:44

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	58
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	56
				1,2,3,7,8-PeCDF-13C	2.00	52
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	53
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	55
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	71
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	53
				1,2,3,4,7,8-HxCDD-13C	2.00	60
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	65
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	59
				1,2,3,4,7,8,9-HpCDF-13C	2.00	48
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	56
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	38 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	62
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-02			
Lab Sample ID	10414063002			
Filename	U171216B_11			
Injected By	BAL			
Total Amount Extracted	11.1 g	Matrix	Solid	
% Moisture	3.7	Dilution	NA	
Dry Weight Extracted	10.7 g	Collected	12/07/2017	12:13
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/16/2017	21:28

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	54
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	54
				1,2,3,7,8-PeCDF-13C	2.00	55
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	57
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	56
				1,2,3,4,7,8-HxCDF-13C	2.00	70
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	79
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	55
				1,2,3,4,7,8-HxCDD-13C	2.00	66
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	72
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	64
				1,2,3,4,7,8,9-HpCDF-13C	2.00	48
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	60
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	38 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-03		
Lab Sample ID	10414063003		
Filename	U171216B_12		
Injected By	BAL		
Total Amount Extracted	11.3 g	Matrix	Solid
% Moisture	3.4	Dilution	NA
Dry Weight Extracted	10.9 g	Collected	12/07/2017 12:16
ICAL ID	U171107	Received	12/12/2017 08:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017 14:50
Method Blank ID	BLANK-59101	Analyzed	12/16/2017 22:12

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	64
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	64
				1,2,3,7,8-PeCDF-13C	2.00	61
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	63
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	63
				1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	61
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	68
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	63
				1,2,3,4,7,8,9-HpCDF-13C	2.00	56
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	47
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-04		
Lab Sample ID	10414063004		
Filename	U171216B_13		
Injected By	BAL		
Total Amount Extracted	11.3 g	Matrix	Solid
% Moisture	3.7	Dilution	NA
Dry Weight Extracted	10.9 g	Collected	12/07/2017 12:19
ICAL ID	U171107	Received	12/12/2017 08:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017 14:50
Method Blank ID	BLANK-59101	Analyzed	12/16/2017 22:56

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	52
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	54
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	51
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	53
				1,2,3,4,7,8-HxCDF-13C	2.00	65
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	58
				1,2,3,4,7,8-HxCDD-13C	2.00	58
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	60
				1,2,3,4,7,8,9-HpCDF-13C	2.00	49
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	37 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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R = Recovery outside target range

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-05			
Lab Sample ID	10414063005			
Filename	U171216B_14			
Injected By	BAL			
Total Amount Extracted	11.3 g	Matrix	Solid	
% Moisture	3.3	Dilution	NA	
Dry Weight Extracted	10.9 g	Collected	12/07/2017	12:25
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/16/2017	23:40

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	49
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	51
				1,2,3,7,8-PeCDF-13C	2.00	47
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	47
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	49
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	49
				1,2,3,4,7,8-HxCDD-13C	2.00	60
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	63
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	59
				1,2,3,4,7,8,9-HpCDF-13C	2.00	44
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	54
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	35 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	55
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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R = Recovery outside target range

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-06			
Lab Sample ID	10414063006			
Filename	U171216B_15			
Injected By	BAL			
Total Amount Extracted	12.2 g	Matrix	Solid	
% Moisture	8.6	Dilution	NA	
Dry Weight Extracted	11.2 g	Collected	12/07/2017	12:28
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	00:23

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	54
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	54
				1,2,3,7,8-PeCDF-13C	2.00	49
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	50
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	51
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	66
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	53
				1,2,3,4,7,8-HxCDD-13C	2.00	56
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	63
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	58
				1,2,3,4,7,8,9-HpCDF-13C	2.00	48
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	56
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	37 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	55
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-07			
Lab Sample ID	10414063007			
Filename	U171216B_16			
Injected By	BAL			
Total Amount Extracted	12.3 g	Matrix	Solid	
% Moisture	10.7	Dilution	NA	
Dry Weight Extracted	11.0 g	Collected	12/07/2017	12:32
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	01:07

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	52
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	52
				1,2,3,7,8-PeCDF-13C	2.00	48
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	51
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	51
				1,2,3,4,7,8-HxCDF-13C	2.00	61
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	64
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	68
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	50
				1,2,3,4,7,8-HxCDD-13C	2.00	56
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	63
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	55
				1,2,3,4,7,8,9-HpCDF-13C	2.00	46
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	53
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	36 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	51
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
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NC = Not Calculated

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-08			
Lab Sample ID	10414063008			
Filename	U171216B_17			
Injected By	BAL			
Total Amount Extracted	12.1 g	Matrix	Solid	
% Moisture	9.8	Dilution	NA	
Dry Weight Extracted	10.9 g	Collected	12/07/2017	12:36
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	01:50

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	51
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	51
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	51
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	53
				1,2,3,4,7,8-HxCDF-13C	2.00	73
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	84
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	81
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	59
				1,2,3,4,7,8-HxCDD-13C	2.00	68
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	73
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	66
				1,2,3,4,7,8,9-HpCDF-13C	2.00	50
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	63
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	38 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	53
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-09			
Lab Sample ID	10414063009			
Filename	U171216B_18			
Injected By	BAL			
Total Amount Extracted	12.4 g	Matrix	Solid	
% Moisture	11.3	Dilution	NA	
Dry Weight Extracted	11.0 g	Collected	12/07/2017	12:40
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_03 & U171216B_19	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	02:34

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	53
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	52
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	52
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	52
				1,2,3,4,7,8-HxCDF-13C	2.00	64
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	70
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	51
				1,2,3,4,7,8-HxCDD-13C	2.00	59
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	59
				1,2,3,4,7,8,9-HpCDF-13C	2.00	49
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	35 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	55
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
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Minneapolis, MN 55414

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712171-10			
Lab Sample ID	10414063010			
Filename	F171220A_08			
Injected By	SMT			
Total Amount Extracted	12.4 g	Matrix	Solid	
% Moisture	17.3	Dilution	NA	
Dry Weight Extracted	10.3 g	Collected	12/07/2017	12:44
ICAL ID	F171219	Received	12/12/2017	08:00
CCal Filename(s)	F171220A_01 & F171220B_01	Extracted	12/14/2017	14:55
Method Blank ID	BLANK-59190	Analyzed	12/20/2017	15:58

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	71
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	69
				1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	80
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	87
				1,2,3,4,7,8-HxCDF-13C	2.00	72
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	71
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	65
				1,2,3,4,7,8-HxCDD-13C	2.00	69
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	65
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	66
				1,2,3,4,7,8,9-HpCDF-13C	2.00	60
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	67
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	72
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
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1700 Elm Street - Suite 200
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Tel: 612-607-1700
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Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-59101	Matrix	Solid
Filename	U171216B_07	Dilution	NA
Total Amount Extracted	10.0 g	Extracted	12/13/2017 14:50
ICAL ID	U171107	Analyzed	12/16/2017 18:33
CCal Filename(s)	U171216B_03 & U171216B_19	Injected By	BAL

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	53
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	52
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	54
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	56
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	71
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	55
				1,2,3,4,7,8-HxCDD-13C	2.00	62
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	52
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	62
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	41
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-59190	Matrix	Solid
Filename	F171220B_04	Dilution	NA
Total Amount Extracted	20.5 g	Extracted	12/14/2017 14:55
ICAL ID	F171219	Analyzed	12/21/2017 01:18
CCal Filename(s)	F171220B_01 & F171220B_15	Injected By	SMT

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	79
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	72
				1,2,3,7,8-PeCDF-13C	2.00	108
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	108
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	105
				1,2,3,4,7,8-HxCDF-13C	2.00	77
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	64
				1,2,3,4,7,8-HxCDD-13C	2.00	71
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	52
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	58
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	44
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-59102		
Filename	U171216B_06	Matrix	Solid
Total Amount Extracted	10.6 g	Dilution	NA
ICAL ID	U171107	Extracted	12/13/2017 14:50
CCal Filename(s)	U171216B_03 & U171216B_19	Analyzed	12/16/2017 17:49
Method Blank ID	BLANK-59101	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.
2,3,7,8-TCDF	0.20	0.18	91
Total TCDF			
2,3,7,8-TCDD	0.20	0.19	93
Total TCDD			
1,2,3,7,8-PeCDF	1.0	0.95	95
2,3,4,7,8-PeCDF	1.0	0.86	86
Total PeCDF			
1,2,3,7,8-PeCDD	1.0	0.87	87
Total PeCDD			
1,2,3,4,7,8-HxCDF	1.0	0.94	94
1,2,3,6,7,8-HxCDF	1.0	0.88	88
2,3,4,6,7,8-HxCDF	1.0	0.84	84
1,2,3,7,8,9-HxCDF	1.0	0.85	85
Total HxCDF			
1,2,3,4,7,8-HxCDD	1.0	1.0	100
1,2,3,6,7,8-HxCDD	1.0	0.98	98
1,2,3,7,8,9-HxCDD	1.0	0.95	95
Total HxCDD			
1,2,3,4,6,7,8-HpCDF	1.0	0.94	94
1,2,3,4,7,8,9-HpCDF	1.0	0.93	93
Total HpCDF			
1,2,3,4,6,7,8-HpCDD	1.0	0.85	85
Total HpCDD			
OCDF	2.0	2.0	100
OCDD	2.0	1.9	94

Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF-13C	2.0	59
2,3,7,8-TCDD-13C	2.0	57
1,2,3,7,8-PeCDF-13C	2.0	56
2,3,4,7,8-PeCDF-13C	2.0	57
1,2,3,7,8-PeCDD-13C	2.0	60
1,2,3,4,7,8-HxCDF-13C	2.0	70
1,2,3,6,7,8-HxCDF-13C	2.0	79
2,3,4,6,7,8-HxCDF-13C	2.0	81
1,2,3,7,8,9-HxCDF-13C	2.0	64
1,2,3,4,7,8-HxCDD-13C	2.0	68
1,2,3,6,7,8-HxCDD-13C	2.0	73
1,2,3,4,6,7,8-HpCDF-13C	2.0	66
1,2,3,4,7,8,9-HpCDF-13C	2.0	54
1,2,3,4,6,7,8-HpCDD-13C	2.0	64
OCDD-13C	4.0	44
1,2,3,4-TCDD-13C	2.0	NA
1,2,3,7,8,9-HxCDD-13C	2.0	NA
2,3,7,8-TCDD-37Cl4	0.20	59

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-59191		
Filename	F171220B_02	Matrix	Solid
Total Amount Extracted	20.2 g	Dilution	NA
ICAL ID	F171219	Extracted	12/14/2017 14:55
CCal Filename(s)	F171220B_01 & F171220B_15	Analyzed	12/20/2017 23:52
Method Blank ID	BLANK-59190	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.
2,3,7,8-TCDF	0.20	0.18	89
Total TCDF			
2,3,7,8-TCDD	0.20	0.18	92
Total TCDD			
1,2,3,7,8-PeCDF	1.0	0.94	94
2,3,4,7,8-PeCDF	1.0	0.86	86
Total PeCDF			
1,2,3,7,8-PeCDD	1.0	0.90	90
Total PeCDD			
1,2,3,4,7,8-HxCDF	1.0	0.93	93
1,2,3,6,7,8-HxCDF	1.0	0.88	88
2,3,4,6,7,8-HxCDF	1.0	0.83	83
1,2,3,7,8,9-HxCDF	1.0	0.89	89
Total HxCDF			
1,2,3,4,7,8-HxCDD	1.0	0.90	90
1,2,3,6,7,8-HxCDD	1.0	0.97	97
1,2,3,7,8,9-HxCDD	1.0	0.93	93
Total HxCDD			
1,2,3,4,6,7,8-HpCDF	1.0	0.88	88
1,2,3,4,7,8,9-HpCDF	1.0	0.87	87
Total HpCDF			
1,2,3,4,6,7,8-HpCDD	1.0	0.84	84
Total HpCDD			
OCDF	2.0	1.8	90
OCDD	2.0	1.8	90

Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF-13C	2.0	77
2,3,7,8-TCDD-13C	2.0	73
1,2,3,7,8-PeCDF-13C	2.0	88
2,3,4,7,8-PeCDF-13C	2.0	84
1,2,3,7,8-PeCDD-13C	2.0	90
1,2,3,4,7,8-HxCDF-13C	2.0	76
1,2,3,6,7,8-HxCDF-13C	2.0	77
2,3,4,6,7,8-HxCDF-13C	2.0	79
1,2,3,7,8,9-HxCDF-13C	2.0	72
1,2,3,4,7,8-HxCDD-13C	2.0	77
1,2,3,6,7,8-HxCDD-13C	2.0	69
1,2,3,4,6,7,8-HpCDF-13C	2.0	73
1,2,3,4,7,8,9-HpCDF-13C	2.0	66
1,2,3,4,6,7,8-HpCDD-13C	2.0	74
OCDD-13C	4.0	53
1,2,3,4-TCDD-13C	2.0	NA
1,2,3,7,8,9-HxCDD-13C	2.0	NA
2,3,7,8-TCDD-37Cl4	0.20	76

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Spiked Sample Report

Client - ESS Laboratory

Client's Sample ID	1712171-10-MS		
Lab Sample ID	10414063010-MS		
Filename	F171220A_12	Matrix	Solid
Total Amount Extracted	12.4 g	Dilution	NA
ICAL ID	F171219	Extracted	12/14/2017 14:55
CCal Filename(s)	F171220A_01 & F171220B_01	Analyzed	12/20/2017 18:50
Method Blank ID	BLANK-59190	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.18	92	2,3,7,8-TCDF-13C	2.00	78
				2,3,7,8-TCDD-13C	2.00	75
				1,2,3,7,8-PeCDF-13C	2.00	95
2,3,7,8-TCDD	0.20	0.19	97	2,3,4,7,8-PeCDF-13C	2.00	93
				1,2,3,7,8-PeCDD-13C	2.00	99
				1,2,3,4,7,8-HxCDF-13C	2.00	71
1,2,3,7,8-PeCDF	1.00	1.01	101	1,2,3,6,7,8-HxCDF-13C	2.00	71
2,3,4,7,8-PeCDF	1.00	0.91	91	2,3,4,6,7,8-HxCDF-13C	2.00	72
				1,2,3,7,8,9-HxCDF-13C	2.00	67
				1,2,3,4,7,8-HxCDD-13C	2.00	72
1,2,3,7,8-PeCDD	1.00	0.93	93	1,2,3,6,7,8-HxCDD-13C	2.00	67
				1,2,3,4,6,7,8-HpCDF-13C	2.00	68
				1,2,3,4,7,8,9-HpCDF-13C	2.00	63
1,2,3,4,7,8-HxCDF	1.00	0.98	98	1,2,3,4,6,7,8-HpCDD-13C	2.00	69
1,2,3,6,7,8-HxCDF	1.00	0.93	93	OCDD-13C	4.00	56
2,3,4,6,7,8-HxCDF	1.00	0.88	88			
1,2,3,7,8,9-HxCDF	1.00	0.96	96	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	0.97	97	2,3,7,8-TCDD-37Cl4	0.20	79
1,2,3,6,7,8-HxCDD	1.00	0.98	98			
1,2,3,7,8,9-HxCDD	1.00	1.01	101			
1,2,3,4,6,7,8-HpCDF	1.00	0.94	94			
1,2,3,4,7,8,9-HpCDF	1.00	0.92	92			
1,2,3,4,6,7,8-HpCDD	1.00	0.92	92			
OCDF	2.00	1.80	90			
OCDD	2.00	1.96	98			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

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Method 8290 Spiked Sample Report

Client - ESS Laboratory

Client's Sample ID	1712171-10-MSD		
Lab Sample ID	10414063010-MSD		
Filename	F171220A_13	Matrix	Solid
Total Amount Extracted	12.4 g	Dilution	NA
ICAL ID	F171219	Extracted	12/14/2017 14:55
CCal Filename(s)	F171220A_01 & F171220B_01	Analyzed	12/20/2017 19:33
Method Blank ID	BLANK-59190	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.19	96	2,3,7,8-TCDF-13C	2.00	68
				2,3,7,8-TCDD-13C	2.00	60
				1,2,3,7,8-PeCDF-13C	2.00	76
2,3,7,8-TCDD	0.20	0.20	100	2,3,4,7,8-PeCDF-13C	2.00	77
				1,2,3,7,8-PeCDD-13C	2.00	78
				1,2,3,4,7,8-HxCDF-13C	2.00	84
1,2,3,7,8-PeCDF	1.00	1.04	104	1,2,3,6,7,8-HxCDF-13C	2.00	82
2,3,4,7,8-PeCDF	1.00	0.94	94	2,3,4,6,7,8-HxCDF-13C	2.00	81
				1,2,3,7,8,9-HxCDF-13C	2.00	58
				1,2,3,4,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDD	1.00	0.97	97	1,2,3,6,7,8-HxCDD-13C	2.00	76
				1,2,3,4,6,7,8-HpCDF-13C	2.00	76
				1,2,3,4,7,8,9-HpCDF-13C	2.00	63
1,2,3,4,7,8-HxCDF	1.00	1.02	102	1,2,3,4,6,7,8-HpCDD-13C	2.00	73
1,2,3,6,7,8-HxCDF	1.00	0.97	97	OCDD-13C	4.00	63
2,3,4,6,7,8-HxCDF	1.00	0.90	90			
1,2,3,7,8,9-HxCDF	1.00	0.97	97	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.04	104	2,3,7,8-TCDD-37Cl4	0.20	62
1,2,3,6,7,8-HxCDD	1.00	1.01	101			
1,2,3,7,8,9-HxCDD	1.00	0.88	88			
1,2,3,4,6,7,8-HpCDF	1.00	0.97	97			
1,2,3,4,7,8,9-HpCDF	1.00	0.95	95			
1,2,3,4,6,7,8-HpCDD	1.00	0.95	95			
OCDF	2.00	1.94	97			
OCDD	2.00	2.06	103			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

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Tel: 612-607-1700
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Method 8290 Spike Sample Results

Client - ESS Laboratory

Client Sample ID	1712171-10			Dry Weights	
Lab Sample ID	10414063010	Sample Filename	F171220A_08	Sample Amount	10.3 g
MS ID	10414063010-MS	MS Filename	F171220A_12	MS Amount	10.3 g
MSD ID	10414063010-MSD	MSD Filename	F171220A_13	MSD Amount	10.3 g

Analyte	Sample Conc. ng/Kg	MS/MSD Qs (ng)	MS Qm (ng)	MSD Qm (ng)	RPD	Background Subtracted MS % Rec.	MSD % Rec.	RPD
2,3,7,8-TCDF	0.000	0.20	0.18	0.19	4.3	92	96	4.3
2,3,7,8-TCDD	0.000	0.20	0.19	0.20	2.9	97	100	2.9
1,2,3,7,8-PeCDF	0.000	1.00	1.01	1.04	3.5	101	104	3.5
2,3,4,7,8-PeCDF	0.000	1.00	0.91	0.94	3.2	91	94	3.2
1,2,3,7,8-PeCDD	0.000	1.00	0.93	0.97	4.0	93	97	4.0
1,2,3,4,7,8-HxCDF	0.000	1.00	0.98	1.02	3.9	98	102	3.9
1,2,3,6,7,8-HxCDF	0.000	1.00	0.93	0.97	4.5	93	97	4.5
2,3,4,6,7,8-HxCDF	0.000	1.00	0.88	0.90	1.7	88	90	1.7
1,2,3,7,8,9-HxCDF	0.000	1.00	0.96	0.97	0.6	96	97	0.6
1,2,3,4,7,8-HxCDD	0.000	1.00	0.97	1.04	7.2	97	104	7.2
1,2,3,6,7,8-HxCDD	0.000	1.00	0.98	1.01	2.6	98	101	2.6
1,2,3,7,8,9-HxCDD	0.000	1.00	1.01	0.88	13.3	101	88	13.3
1,2,3,4,6,7,8-HpCDF	0.000	1.00	0.94	0.97	2.5	94	97	2.5
1,2,3,4,7,8,9-HpCDF	0.000	1.00	0.92	0.95	2.9	92	95	2.9
1,2,3,4,6,7,8-HpCDD	0.000	1.00	0.92	0.95	3.5	92	95	3.5
OCDF	0.000	2.00	1.80	1.94	7.2	90	97	7.2
OCDD	0.000	2.00	1.96	2.06	5.3	97	102	5.4

Definitions

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712171
Date Received: 12/7/2017
Project Due Date: 12/12/2017
Days for Project: 3 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.1 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 01-10
    Analysis: Grain Size
    TAT: 30 Day
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 12/7/17 Time: 1508 By: 4

Sample Receiving Notes:
Grain Size for Analysis - Post on Hold W 12/7/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? ____ Date: ____ Time: ____ By: ____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	188757	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	188758	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	188768	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	188778	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
01	188788	Yes	NA	Yes	Plastic Baggie	NP	
01	188798	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	188817	Yes	NA	Yes	VOA Vial - Other	Other	
01	188818	Yes	NA	Yes	VOA Vial - Other	Other	
02	188755	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	188756	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	188767	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	188777	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
02	188787	Yes	NA	Yes	Plastic Baggie	NP	
02	188797	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	188815	Yes	NA	Yes	VOA Vial - Other	Other	
02	188816	Yes	NA	Yes	VOA Vial - Other	Other	
03	188753	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	188754	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	188766	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	188776	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
03	188786	Yes	NA	Yes	Plastic Baggie	NP	
03	188796	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	188813	Yes	NA	Yes	VOA Vial - Other	Other	
03	188814	Yes	NA	Yes	VOA Vial - Other	Other	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712171

Date Received: 12/7/2017

04	188751	Yes	NA	Yes	8 oz. Jar - Unpres	NP
04	188752	Yes	NA	Yes	8 oz. Jar - Unpres	NP
04	188765	Yes	NA	Yes	4 oz. Jar - Unpres	NP
04	188775	Yes	NA	Yes	2 oz. Jar - Unpres	NP
04	188785	Yes	NA	Yes	Plastic Baggie	NP
04	188795	Yes	NA	Yes	VOA Vial - Methanol	MeOH
04	188811	Yes	NA	Yes	VOA Vial - Other	Other
04	188812	Yes	NA	Yes	VOA Vial - Other	Other
05	188749	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	188750	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	188764	Yes	NA	Yes	4 oz. Jar - Unpres	NP
05	188774	Yes	NA	Yes	2 oz. Jar - Unpres	NP
05	188784	Yes	NA	Yes	Plastic Baggie	NP
05	188794	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	188809	Yes	NA	Yes	VOA Vial - Other	Other
05	188810	Yes	NA	Yes	VOA Vial - Other	Other
06	188747	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	188748	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	188763	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	188773	Yes	NA	Yes	2 oz. Jar - Unpres	NP
06	188783	Yes	NA	Yes	Plastic Baggie	NP
06	188793	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	188807	Yes	NA	Yes	VOA Vial - Other	Other
06	188808	Yes	NA	Yes	VOA Vial - Other	Other
07	188745	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	188746	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	188762	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	188772	Yes	NA	Yes	2 oz. Jar - Unpres	NP
07	188782	Yes	NA	Yes	Plastic Baggie	NP
07	188792	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	188805	Yes	NA	Yes	VOA Vial - Other	Other
07	188806	Yes	NA	Yes	VOA Vial - Other	Other
08	188743	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	188744	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	188761	Yes	NA	Yes	4 oz. Jar - Unpres	NP
08	188771	Yes	NA	Yes	2 oz. Jar - Unpres	NP
08	188781	Yes	NA	Yes	Plastic Baggie	NP
08	188791	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	188803	Yes	NA	Yes	VOA Vial - Other	Other
08	188804	Yes	NA	Yes	VOA Vial - Other	Other
09	188741	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	188742	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	188760	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	188770	Yes	NA	Yes	2 oz. Jar - Unpres	NP
09	188780	Yes	NA	Yes	Plastic Baggie	NP
09	188790	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	188801	Yes	NA	Yes	VOA Vial - Other	Other
09	188802	Yes	NA	Yes	VOA Vial - Other	Other
10	188739	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	188740	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	188759	Yes	NA	Yes	4 oz. Jar - Unpres	NP
10	188769	Yes	NA	Yes	2 oz. Jar - Unpres	NP
10	188779	Yes	NA	Yes	Plastic Baggie	NP
10	188789	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	188799	Yes	NA	Yes	VOA Vial - Other	Other
10	188800	Yes	NA	Yes	VOA Vial - Other	Other
11	188819	Yes	NA	Yes	VOA Vial - Other	Other
11	188820	Yes	NA	Yes	VOA Vial - Methanol	MeOH

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/7/17 1455

Reviewed By: _____ Date & Time: 12/7/17 1508

Delivered By: _____ 12/7/17 1508

Changes made 12/11/17 - ML

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time	5-Day Rush
Regulatory State	
Is this project for any of the following?	○CT RCP ◉MA MCP ○RGP
ESS Lab #	1712171
Reporting Limits	S-1
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	11/30/17	12:10	Grab	Soil	Type A - Capping Sand - 015	X	X	X	X	X	X	X	X	X	X	X
02	11/30/17	12:13	Grab	Soil	Type A - Capping Sand - 016	X	X	X	X	X	X	X	X	X	X	X
03	11/30/17	12:16	Grab	Soil	Type A - Capping Sand - 017	X	X	X	X	X	X	X	X	X	X	X
04	11/30/17	12:19	Grab	Soil	Type A - Capping Sand - 018	X	X	X	X	X	X	X	X	X	X	X
05	11/30/17	12:25	Grab	Soil	Type A - Capping Sand - 019	X	X	X	X	X	X	X	X	X	X	X
06	11/30/17	12:28	Grab	Soil	Type C - Capping Sand - 009	X	X	X	X	X	X	X	X	X	X	X
07	11/30/17	12:32	Grab	Soil	Type C - Capping Sand - 010	X	X	X	X	X	X	X	X	X	X	X
08	11/30/17	12:36	Grab	Soil	Type C - Capping Sand - 011	X	X	X	X	X	X	X	X	X	X	X
09	11/30/17	12:40	Grab	Soil	Type C - Capping Sand - 012	X	X	X	X	X	X	X	X	X	X	X
10	11/30/17	12:44	Grab	Soil	Type C - Capping Sand - 013	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 12/17 Temp blank (TB) vials

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: ✓

Seals Intact: –

Cooler Temperature: Ice/emf 2.1 °C

Sampled by: Aggregate Industries QC

Comments: Please specify "Other" preservative and containers types in this space

~~Hold on Analytical Testing until discussion with Katherine Mason, dependent on gradation results~~ 12/11/17 ML ~~12/7/17~~

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature]	[signature] 12-7-17	[signature] 12-7-17	[signature] 12/7/17 1417
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Gavin Wilton SPS			

13:45

CHANGES MADE 12/8/17 - ML

ESS Laboratory

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185 Frances Avenue, Cranston RI 02910
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www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1712171

Turn Time ~~5 Day~~ Rush due 12/11/17

Regulatory State

Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1

Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	11/30/17	12:10	Grab	Soil	Type A - Capping Sand - 015	X	X	X	X	X	X	X	X	X	X	X
02	11/30/17	12:13	Grab	Soil	Type A - Capping Sand - 016	X	X	X	X	X	X	X	X	X	X	X
03	11/30/17	12:16	Grab	Soil	Type A - Capping Sand - 017	X	X	X	X	X	X	X	X	X	X	X
04	11/30/17	12:19	Grab	Soil	Type A - Capping Sand - 018	X	X	X	X	X	X	X	X	X	X	X
05	11/30/17	12:25	Grab	Soil	Type A - Capping Sand - 019	X	X	X	X	X	X	X	X	X	X	X
06	11/30/17	12:28	Grab	Soil	Type C - Capping Sand - 009	X	X	X	X	X	X	X	X	X	X	X
07	11/30/17	12:32	Grab	Soil	Type C - Capping Sand - 010	X	X	X	X	X	X	X	X	X	X	X
08	11/30/17	12:36	Grab	Soil	Type C - Capping Sand - 011	X	X	X	X	X	X	X	X	X	X	X
09	11/30/17	12:40	Grab	Soil	Type C - Capping Sand - 012	X	X	X	X	X	X	X	X	X	X	X
10	11/30/17	12:44	Grab	Soil	Type C - Capping Sand - 013	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 12/17 Temp blanks (TB) VIVIS

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: ✓

Seals Intact: –

Cooler Temperature: Iceless 2.1 °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on Analytical Testing until discussion with Katherine Mason, dependent on gradation results

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature]	[signature] 12-7-17 11:46	[signature] 12-7-17 11:12	[signature] 12/7/17 1417
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton SPS 12:45			

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CHAIN OF CUSTODY

ESS Lab #	1712171
Turn Time	5-Day Rush
Reporting Limits	S-1
Regulatory State	
Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216					
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02	11/30/17	12:13	Grab	Soil	Type A - Capping Sand - 016	X	X	X	X	X	X	X	X	X	X	X					
03	11/30/17	12:16	Grab	Soil	Type A - Capping Sand - 017	X	X	X	X	X	X	X	X	X	X	X					
04	11/30/17	12:19	Grab	Soil	Type A - Capping Sand - 018	X	X	X	X	X	X	X	X	X	X	X					
05	11/30/17	12:25	Grab	Soil	Type A - Capping Sand - 019	X	X	X	X	X	X	X	X	X	X	X					
06	11/30/17	12:28	Grab	Soil	Type C - Capping Sand - 009	X	X	X	X	X	X	X	X	X	X	X					
07	11/30/17	12:32	Grab	Soil	Type C - Capping Sand - 010	X	X	X	X	X	X	X	X	X	X	X					
08	11/30/17	12:36	Grab	Soil	Type C - Capping Sand - 011	X	X	X	X	X	X	X	X	X	X	X					
09	11/30/17	12:40	Grab	Soil	Type C - Capping Sand - 012	X	X	X	X	X	X	X	X	X	X	X					
10	11/30/17	12:44	Grab	Soil	Type C - Capping Sand - 013	X	X	X	X	X	X	X	X	X	X	X					

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 12/17 Temp blanks (TB) VOCs

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: ✓

Seals Intact: –

Cooler Temperature: Iceless 2.1 °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on Analytical Testing until discussion with Katherine Mason, dependent on gradation results

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature]	[signature] 12-7-17 11:46	[signature] 12-7-17 11:12	[signature] 12/7/17 1417
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**
Devon Wilton SPS 12:45			

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1712199

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:57 pm, Dec 21, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses

CTS - Cranston, RI	Grain Size Analysis, Soil Classification, Water Content
Pace Analytical - Minneapolis, MN	Dioxin

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

SAMPLE RECEIPT

The following samples were received on December 11, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Low Level VOA vials were frozen by ESS Laboratory on December 8, 2017 at 10:02.

These samples were originally received on December 8, 2017.

Lab Number	Sample Name	Matrix	Analysis
1712199-01	Type A - Capping Sand - 020	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-02	Type A - Capping Sand - 021	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-03	Type A - Capping Sand - 022	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-04	Type A - Capping Sand - 023	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-05	Type A - Capping Sand - 024	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-06	Type C - Capping Sand - 014	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-07	Type C - Capping Sand - 015	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-08	Type C - Capping Sand - 016	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-09	Type C - Capping Sand - 017	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-10	Type C - Capping Sand - 018	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712199-11	Trip Blank	Solid	8260B Low

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

C7L0188-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
1,4-Dioxane (23% @ 20%), 2-Hexanone (26% @ 20%), 4-Methyl-2-Pentanone (24% @ 20%), Dichlorodifluoromethane (25% @ 20%), Naphthalene (28% @ 20%), sec-Butylbenzene (28% @ 20%), Tetrahydrofuran (33% @ 20%)

8151A Chlorinated Herbicides

1712199-09 **Modified result**
MCPA [2C] , MCPP [2C]

1712199-09 **Peaks found in the retention time window for MCPA, MCPP did not confirm by GC/MS.**

8270D Semi-Volatile Organic Compounds

C7L0183-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (97% @ 80-120%), 2,6-Dinitrotoluene (97% @ 80-120%)

C7L0183-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (86% @ 80-120%), Pentachlorophenol (87% @ 80-120%)

C7L0183-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (21% @ 20%), N-Nitrosodimethylamine (30% @ 20%), Pyridine (22% @ 20%)

C7L0200-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (101% @ 80-120%)

C7L0200-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (93% @ 80-120%), Pentachlorophenol (98% @ 80-120%)

C7L0200-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (21% @ 20%), N-Nitrosodimethylamine (22% @ 20%), Pyridine (23% @ 20%)

C7L0208-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (69% @ 80-120%), Pentachlorophenol (69% @ 80-120%)

C7L0208-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (31% @ 20%), N-Nitrosodimethylamine (50% @ 20%), Pentachlorophenol (31% @ 20%)

C7L0225-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (90% @ 80-120%), 2,6-Dinitrotoluene (93% @ 80-120%)

C7L0225-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (110% @ 80-120%), Pentachlorophenol (100% @ 80-120%)

C7L0225-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4-Nitrophenol (22% @ 20%), N-Nitrosodimethylamine (31% @ 20%)

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712199

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1712199-01 through 1712199-11**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

(X) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	(X) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	( ) MassDEP EPH CAM IV B	(X) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes (X) No ( )*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard

Date: December 21, 2017

Printed Name: Laurel Stoddard

Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.46)		6020A		20	NAR	12/13/17 17:42	2.27	100	CL71223
Arsenic	ND (2.28)		6010C		1	KJK	12/16/17 3:09	2.27	100	CL71223
Barium	ND (2.28)		6010C		1	KJK	12/15/17 2:36	2.27	100	CL71223
Beryllium	**0.38** (0.10)		6010C		1	KJK	12/15/17 2:36	2.27	100	CL71223
Cadmium	ND (0.46)		6010C		1	KJK	12/15/17 2:36	2.27	100	CL71223
Chromium	ND (0.91)		6010C		1	KJK	12/15/17 2:36	2.27	100	CL71223
Lead	ND (4.55)		6010C		1	KJK	12/15/17 2:36	2.27	100	CL71223
Mercury	ND (0.022)		7471B		1	MJV	12/13/17 13:13	0.91	40	CL71224
Nickel	ND (2.28)		6010C		1	KJK	12/15/17 2:36	2.27	100	CL71223
Selenium	ND (0.46)		6020A		20	NAR	12/13/17 17:42	2.27	100	CL71223
Silver	ND (0.46)		6010C		1	KJK	12/15/17 2:36	2.27	100	CL71223
Thallium	ND (0.46)		6020A		20	NAR	12/13/17 17:42	2.27	100	CL71223
Vanadium	ND (0.91)		6010C		1	KJK	12/15/17 2:36	2.27	100	CL71223
Zinc	**6.60** (2.28)		6010C		1	KJK	12/15/17 2:36	2.27	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 4.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0024)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
1,4-Dioxane	ND (0.120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
2-Butanone	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
2-Chlorotoluene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
2-Hexanone	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
4-Chlorotoluene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Acetone	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Benzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Bromobenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Bromochloromethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 4.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Bromoform	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Bromomethane	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Carbon Disulfide	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Chlorobenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Chloroethane	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Chloroform	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Chloromethane	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Dibromochloromethane	ND (0.0024)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Dibromomethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Diethyl Ether	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Di-isopropyl ether	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Ethylbenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Isopropylbenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Methylene Chloride	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Naphthalene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
n-Butylbenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
n-Propylbenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
sec-Butylbenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Styrene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
tert-Butylbenzene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Tetrachloroethene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Tetrahydrofuran	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Toluene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 4.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Trichloroethene	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Vinyl Chloride	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Xylene O	ND (0.0060)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Xylene P,M	ND (0.0120)		8260B Low		1	12/13/17 21:48	C7L0188	CL71319
Xylenes (Total)	ND (0.0120)		8260B Low		1	12/13/17 21:48		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*126 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*117 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
4,4´-DDE	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
4,4´-DDT	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Aldrin	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
alpha-BHC	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
alpha-Chlordane	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
beta-BHC	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Chlordane (Total)	ND (0.0213)		8081B		1	12/15/17 2:02	C7L0182	CL71208
delta-BHC	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Dieldrin	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Endosulfan I	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Endosulfan II	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Endrin	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Endrin Ketone	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/15/17 2:02	C7L0182	CL71208
gamma-Chlordane	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Heptachlor	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Hexachlorobenzene	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208
Methoxychlor	ND (0.0027)		8081B		1	12/15/17 2:02	C7L0182	CL71208

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*105 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*117 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*90 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 16:21		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 16:21		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 16:21		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 16:21		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 16:21		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 16:21		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 16:21		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 16:21		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 16:21		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*97 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*92 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 3:33	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 3:33	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/21/17 3:33	C7L0310	CL71832
2,4-DB	ND (0.049)		8151A		1	12/21/17 3:33	C7L0310	CL71832
Dalapon	ND (0.047)		8151A		1	12/21/17 3:33	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 3:33	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/21/17 3:33	C7L0310	CL71832
Dinoseb	ND (0.049)		8151A		1	12/21/17 3:33	C7L0310	CL71832
MCPA	ND (2.38)		8151A		1	12/21/17 3:33	C7L0310	CL71832
MCPP	ND (2.41)		8151A		1	12/21/17 3:33	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*69 %*		*30-150*
Surrogate: DCAA [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
1,2-Dichlorobenzene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
1,3-Dichlorobenzene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
1,4-Dichlorobenzene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2,4,5-Trichlorophenol	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2,4,6-Trichlorophenol	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2,4-Dichlorophenol	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2,4-Dimethylphenol	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2,4-Dinitrophenol	ND (1.73)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2,4-Dinitrotoluene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2,6-Dinitrotoluene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2-Chloronaphthalene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2-Chlorophenol	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2-Methylnaphthalene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2-Methylphenol	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
2-Nitrophenol	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
3,3′-Dichlorobenzidine	ND (0.689)		8270D		1	12/15/17 2:50	C7L0225	CL71211
3+4-Methylphenol	ND (0.689)		8270D		1	12/15/17 2:50	C7L0225	CL71211
4-Bromophenyl-phenylether	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
4-Chloroaniline	ND (0.689)		8270D		1	12/15/17 2:50	C7L0225	CL71211
4-Nitrophenol	ND (1.73)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Acenaphthene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Acenaphthylene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Acetophenone	ND (0.689)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Aniline	ND (1.73)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Anthracene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Azobenzene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Benzo(a)anthracene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Benzo(a)pyrene	ND (0.173)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Benzo(b)fluoranthene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Benzo(g,h,i)perylene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Benzo(k)fluoranthene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
bis(2-Chloroethyl)ether	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
bis(2-chloroisopropyl)Ether	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Butylbenzylphthalate	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Chrysene	ND (0.173)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Dibenzo(a,h)Anthracene	ND (0.173)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Dibenzofuran	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Diethylphthalate	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Dimethylphthalate	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Di-n-butylphthalate	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Di-n-octylphthalate	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Fluoranthene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Fluorene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Hexachlorobenzene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Hexachlorobutadiene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Hexachloroethane	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Isophorone	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Naphthalene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Nitrobenzene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
N-Nitrosodimethylamine	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Pentachlorophenol	ND (1.73)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Phenanthrene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Phenol	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211
Pyrene	ND (0.344)		8270D		1	12/15/17 2:50	C7L0225	CL71211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*80 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*89 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*81 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*93 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*72 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*86 %*		*30-130*				
Surrogate: Phenol-d6		*74 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*112 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (111)		9060		1	DEL	12/17/17 15:44	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.41)		6020A		20	NAR	12/13/17 18:23	2.52	100	CL71223
Arsenic	ND (2.05)		6010C		1	KJK	12/16/17 3:42	2.52	100	CL71223
Barium	**2.50** (2.05)		6010C		1	KJK	12/15/17 2:56	2.52	100	CL71223
Beryllium	**0.44** (0.09)		6010C		1	KJK	12/15/17 2:56	2.52	100	CL71223
Cadmium	ND (0.41)		6010C		1	KJK	12/15/17 2:56	2.52	100	CL71223
Chromium	ND (0.82)		6010C		1	KJK	12/15/17 2:56	2.52	100	CL71223
Lead	**6.04** (4.10)		6010C		1	KJK	12/15/17 2:56	2.52	100	CL71223
Mercury	ND (0.020)		7471B		1	MJV	12/13/17 13:27	1.01	40	CL71224
Nickel	ND (2.05)		6010C		1	KJK	12/15/17 2:56	2.52	100	CL71223
Selenium	ND (0.41)		6020A		20	NAR	12/13/17 18:23	2.52	100	CL71223
Silver	ND (0.41)		6010C		1	KJK	12/15/17 2:56	2.52	100	CL71223
Thallium	ND (0.41)		6020A		20	NAR	12/13/17 18:23	2.52	100	CL71223
Vanadium	ND (0.82)		6010C		1	KJK	12/15/17 2:56	2.52	100	CL71223
Zinc	**7.91** (2.05)		6010C		1	KJK	12/15/17 2:56	2.52	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
1,4-Dioxane	ND (0.0834)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
2-Butanone	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
2-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
2-Hexanone	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
4-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Acetone	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Benzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Bromobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Bromochloromethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Bromoform	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Bromomethane	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Carbon Disulfide	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Chlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Chloroethane	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Chloroform	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Chloromethane	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Dibromomethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Diethyl Ether	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Di-isopropyl ether	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Ethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Isopropylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Methylene Chloride	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Naphthalene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
n-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
n-Propylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
sec-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Styrene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
tert-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Tetrachloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Tetrahydrofuran	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Toluene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Trichloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Vinyl Chloride	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Xylene O	ND (0.0042)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Xylene P,M	ND (0.0083)		8260B Low		1	12/13/17 22:13	C7L0188	CL71319
Xylenes (Total)	ND (0.0083)		8260B Low		1	12/13/17 22:13		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*126 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*118 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 19.8
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
4,4´-DDE	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
4,4´-DDT	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Aldrin	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
alpha-BHC	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
alpha-Chlordane	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
beta-BHC	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Chlordane (Total)	ND (0.0209)		8081B		1	12/15/17 2:32	C7L0182	CL71208
delta-BHC	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Dieldrin	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Endosulfan I	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Endosulfan II	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Endrin	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Endrin Ketone	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/15/17 2:32	C7L0182	CL71208
gamma-Chlordane	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Heptachlor	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Hexachlorobenzene	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208
Methoxychlor	ND (0.0026)		8081B		1	12/15/17 2:32	C7L0182	CL71208

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*112 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*123 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 16:40		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 16:40		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 16:40		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 16:40		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 16:40		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 16:40		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 16:40		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 16:40		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 16:40		CL71114

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*90 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 4:05	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 4:05	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/21/17 4:05	C7L0310	CL71832
2,4-DB	ND (0.049)		8151A		1	12/21/17 4:05	C7L0310	CL71832
Dalapon	ND (0.047)		8151A		1	12/21/17 4:05	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 4:05	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/21/17 4:05	C7L0310	CL71832
Dinoseb	ND (0.049)		8151A		1	12/21/17 4:05	C7L0310	CL71832
MCPA	ND (2.38)		8151A		1	12/21/17 4:05	C7L0310	CL71832
MCPP	ND (2.41)		8151A		1	12/21/17 4:05	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*66 %*		*30-150*
Surrogate: DCAA [2C]	*73 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
1,2-Dichlorobenzene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
1,3-Dichlorobenzene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
1,4-Dichlorobenzene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2,4,5-Trichlorophenol	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2,4,6-Trichlorophenol	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2,4-Dichlorophenol	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2,4-Dimethylphenol	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2,4-Dinitrophenol	ND (1.77)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2,4-Dinitrotoluene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2,6-Dinitrotoluene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2-Chloronaphthalene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2-Chlorophenol	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2-Methylnaphthalene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2-Methylphenol	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
2-Nitrophenol	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
3,3′-Dichlorobenzidine	ND (0.709)		8270D		1	12/15/17 3:24	C7L0225	CL71211
3+4-Methylphenol	ND (0.709)		8270D		1	12/15/17 3:24	C7L0225	CL71211
4-Bromophenyl-phenylether	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
4-Chloroaniline	ND (0.709)		8270D		1	12/15/17 3:24	C7L0225	CL71211
4-Nitrophenol	ND (1.77)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Acenaphthene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Acenaphthylene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Acetophenone	ND (0.709)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Aniline	ND (1.77)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Anthracene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Azobenzene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Benzo(a)anthracene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Benzo(a)pyrene	ND (0.177)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Benzo(b)fluoranthene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Benzo(g,h,i)perylene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Benzo(k)fluoranthene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
bis(2-Chloroethyl)ether	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
bis(2-chloroisopropyl)Ether	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Butylbenzylphthalate	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Chrysene	ND (0.177)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Dibenzo(a,h)Anthracene	ND (0.177)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Dibenzofuran	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Diethylphthalate	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Dimethylphthalate	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Di-n-butylphthalate	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Di-n-octylphthalate	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Fluoranthene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Fluorene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Hexachlorobenzene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Hexachlorobutadiene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Hexachloroethane	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Isophorone	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Naphthalene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Nitrobenzene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
N-Nitrosodimethylamine	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Pentachlorophenol	ND (1.77)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Phenanthrene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Phenol	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211
Pyrene	ND (0.354)		8270D		1	12/15/17 3:24	C7L0225	CL71211

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*79 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*87 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*80 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*87 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*70 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*82 %*		*30-130*				
Surrogate: Phenol-d6		*75 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*104 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (91.1)		9060		1	DEL	12/17/17 16:39	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.31)		6020A		20	NAR	12/13/17 18:28	3.35	100	CL71223
Arsenic	ND (3.09)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223
Barium	ND (3.09)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223
Beryllium	**0.41** (0.14)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223
Cadmium	ND (0.62)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223
Chromium	ND (1.24)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223
Lead	ND (6.18)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223
Mercury	ND (0.024)		7471B		1	MJV	12/13/17 13:29	0.84	40	CL71224
Nickel	ND (3.09)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223
Selenium	ND (0.31)		6020A		20	NAR	12/13/17 18:28	3.35	100	CL71223
Silver	ND (0.62)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223
Thallium	ND (0.31)		6020A		20	NAR	12/13/17 18:28	3.35	100	CL71223
Vanadium	ND (1.24)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223
Zinc	**6.36** (3.09)		6010C		2	KJK	12/16/17 3:46	3.35	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
1,4-Dioxane	ND (0.0848)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
2-Butanone	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
2-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
2-Hexanone	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
4-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Acetone	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Benzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Bromobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Bromochloromethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Bromoform	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Bromomethane	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Carbon Disulfide	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Chlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Chloroethane	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Chloroform	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Chloromethane	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Dibromomethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Diethyl Ether	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Di-isopropyl ether	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Ethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Isopropylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Methylene Chloride	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Naphthalene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
n-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
n-Propylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
sec-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Styrene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
tert-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Tetrachloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Tetrahydrofuran	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Toluene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Trichloroethene	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Vinyl Chloride	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Xylene O	ND (0.0042)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Xylene P,M	ND (0.0085)		8260B Low		1	12/13/17 22:38	C7L0188	CL71319
Xylenes (Total)	ND (0.0085)		8260B Low		1	12/13/17 22:38		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 20.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
4,4´-DDE	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
4,4´-DDT	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Aldrin	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
alpha-BHC	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
alpha-Chlordane	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
beta-BHC	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Chlordane (Total)	ND (0.0204)		8081B		1	12/15/17 3:01	C7L0182	CL71208
delta-BHC	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Dieldrin	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Endosulfan I	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Endosulfan II	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Endrin	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Endrin Ketone	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/15/17 3:01	C7L0182	CL71208
gamma-Chlordane	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Heptachlor	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Hexachlorobenzene	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208
Methoxychlor	ND (0.0025)		8081B		1	12/15/17 3:01	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*109 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*119 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*95 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 16:58		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 16:58		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 16:58		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 16:58		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 16:58		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 16:58		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 16:58		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 16:58		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 16:58		CL71114

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*93 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 4:37	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 4:37	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/21/17 4:37	C7L0310	CL71832
2,4-DB	ND (0.049)		8151A		1	12/21/17 4:37	C7L0310	CL71832
Dalapon	ND (0.047)		8151A		1	12/21/17 4:37	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 4:37	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/21/17 4:37	C7L0310	CL71832
Dinoseb	ND (0.049)		8151A		1	12/21/17 4:37	C7L0310	CL71832
MCPA	ND (2.38)		8151A		1	12/21/17 4:37	C7L0310	CL71832
MCPP	ND (2.41)		8151A		1	12/21/17 4:37	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*69 %*		*30-150*
Surrogate: DCAA [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
1,2-Dichlorobenzene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
1,3-Dichlorobenzene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
1,4-Dichlorobenzene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2,4,5-Trichlorophenol	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2,4,6-Trichlorophenol	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2,4-Dichlorophenol	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2,4-Dimethylphenol	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2,4-Dinitrophenol	ND (1.83)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2,4-Dinitrotoluene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2,6-Dinitrotoluene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2-Chloronaphthalene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2-Chlorophenol	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2-Methylnaphthalene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2-Methylphenol	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
2-Nitrophenol	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
3,3′-Dichlorobenzidine	ND (0.729)		8270D		1	12/15/17 3:58	C7L0225	CL71211
3+4-Methylphenol	ND (0.729)		8270D		1	12/15/17 3:58	C7L0225	CL71211
4-Bromophenyl-phenylether	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
4-Chloroaniline	ND (0.729)		8270D		1	12/15/17 3:58	C7L0225	CL71211
4-Nitrophenol	ND (1.83)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Acenaphthene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Acenaphthylene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Acetophenone	ND (0.729)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Aniline	ND (1.83)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Anthracene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Azobenzene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Benzo(a)anthracene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Benzo(a)pyrene	ND (0.183)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Benzo(b)fluoranthene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Benzo(g,h,i)perylene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Benzo(k)fluoranthene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
bis(2-Chloroethyl)ether	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
bis(2-chloroisopropyl)Ether	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Butylbenzylphthalate	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Chrysene	ND (0.183)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Dibenzo(a,h)Anthracene	ND (0.183)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Dibenzofuran	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Diethylphthalate	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Dimethylphthalate	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Di-n-butylphthalate	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Di-n-octylphthalate	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Fluoranthene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Fluorene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Hexachlorobenzene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Hexachlorobutadiene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Hexachloroethane	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Isophorone	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Naphthalene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Nitrobenzene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
N-Nitrosodimethylamine	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Pentachlorophenol	ND (1.83)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Phenanthrene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Phenol	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211
Pyrene	ND (0.364)		8270D		1	12/15/17 3:58	C7L0225	CL71211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*79 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*88 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*76 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*88 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*69 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*84 %*		*30-130*				
Surrogate: Phenol-d6		*70 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*104 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (82.9)		9060		1	DEL	12/17/17 16:57	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.40)		6020A		20	NAR	12/13/17 18:34	2.62	100	CL71223
Arsenic	ND (1.98)		6010C		1	KJK	12/16/17 3:50	2.62	100	CL71223
Barium	**2.23** (1.98)		6010C		1	KJK	12/15/17 3:05	2.62	100	CL71223
Beryllium	**0.39** (0.09)		6010C		1	KJK	12/15/17 3:05	2.62	100	CL71223
Cadmium	ND (0.40)		6010C		1	KJK	12/15/17 3:05	2.62	100	CL71223
Chromium	ND (0.79)		6010C		1	KJK	12/15/17 3:05	2.62	100	CL71223
Lead	**4.66** (3.95)		6010C		1	KJK	12/15/17 3:05	2.62	100	CL71223
Mercury	ND (0.027)		7471B		1	MJV	12/13/17 13:31	0.75	40	CL71224
Nickel	ND (1.98)		6010C		1	KJK	12/15/17 3:05	2.62	100	CL71223
Selenium	ND (0.40)		6020A		20	NAR	12/13/17 18:34	2.62	100	CL71223
Silver	ND (0.40)		6010C		1	KJK	12/15/17 3:05	2.62	100	CL71223
Thallium	ND (0.40)		6020A		20	NAR	12/13/17 18:34	2.62	100	CL71223
Vanadium	ND (0.79)		6010C		1	KJK	12/15/17 3:05	2.62	100	CL71223
Zinc	**6.44** (1.98)		6010C		1	KJK	12/15/17 3:05	2.62	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
1,4-Dioxane	ND (0.0893)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
2-Butanone	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
2-Chlorotoluene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
2-Hexanone	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
4-Chlorotoluene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Acetone	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Benzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Bromobenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Bromochloromethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Bromoform	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Bromomethane	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Carbon Disulfide	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Chlorobenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Chloroethane	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Chloroform	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Chloromethane	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Dibromomethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Diethyl Ether	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Di-isopropyl ether	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Ethylbenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Isopropylbenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Methylene Chloride	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Naphthalene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
n-Butylbenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
n-Propylbenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
sec-Butylbenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Styrene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
tert-Butylbenzene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Tetrachloroethene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Tetrahydrofuran	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Toluene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Trichloroethene	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Vinyl Chloride	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Xylene O	ND (0.0045)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Xylene P,M	ND (0.0089)		8260B Low		1	12/13/17 23:04	C7L0188	CL71319
Xylenes (Total)	ND (0.0089)		8260B Low		1	12/13/17 23:04		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*125 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*118 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 20.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
4,4´-DDE	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
4,4´-DDT	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Aldrin	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
alpha-BHC	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
alpha-Chlordane	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
beta-BHC	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Chlordane (Total)	ND (0.0198)		8081B		1	12/15/17 3:31	C7L0182	CL71208
delta-BHC	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Dieldrin	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Endosulfan I	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Endosulfan II	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Endrin	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Endrin Ketone	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/15/17 3:31	C7L0182	CL71208
gamma-Chlordane	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Heptachlor	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Hexachlorobenzene	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208
Methoxychlor	ND (0.0025)		8081B		1	12/15/17 3:31	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*85 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*96 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*71 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 20.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 17:17		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 17:17		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 17:17		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 17:17		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 17:17		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 17:17		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 17:17		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 17:17		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 17:17		CL71114

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*101 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*92 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 5:09	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 5:09	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/21/17 5:09	C7L0310	CL71832
2,4-DB	ND (0.049)		8151A		1	12/21/17 5:09	C7L0310	CL71832
Dalapon	ND (0.047)		8151A		1	12/21/17 5:09	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 5:09	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/21/17 5:09	C7L0310	CL71832
Dinoseb	ND (0.049)		8151A		1	12/21/17 5:09	C7L0310	CL71832
MCPA	ND (2.38)		8151A		1	12/21/17 5:09	C7L0310	CL71832
MCPP	ND (2.41)		8151A		1	12/21/17 5:09	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*65 %*		*30-150*
Surrogate: DCAA [2C]	*70 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
1,2-Dichlorobenzene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
1,3-Dichlorobenzene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
1,4-Dichlorobenzene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2,4,5-Trichlorophenol	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2,4,6-Trichlorophenol	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2,4-Dichlorophenol	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2,4-Dimethylphenol	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2,4-Dinitrophenol	ND (1.75)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2,4-Dinitrotoluene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2,6-Dinitrotoluene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2-Chloronaphthalene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2-Chlorophenol	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2-Methylnaphthalene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2-Methylphenol	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
2-Nitrophenol	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
3,3′-Dichlorobenzidine	ND (0.700)		8270D		1	12/15/17 4:32	C7L0225	CL71211
3+4-Methylphenol	ND (0.700)		8270D		1	12/15/17 4:32	C7L0225	CL71211
4-Bromophenyl-phenylether	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
4-Chloroaniline	ND (0.700)		8270D		1	12/15/17 4:32	C7L0225	CL71211
4-Nitrophenol	ND (1.75)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Acenaphthene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Acenaphthylene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Acetophenone	ND (0.700)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Aniline	ND (1.75)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Anthracene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Azobenzene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Benzo(a)anthracene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Benzo(a)pyrene	ND (0.175)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Benzo(b)fluoranthene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Benzo(g,h,i)perylene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Benzo(k)fluoranthene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
bis(2-Chloroethyl)ether	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
bis(2-chloroisopropyl)Ether	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Butylbenzylphthalate	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Chrysene	ND (0.175)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Dibenzo(a,h)Anthracene	ND (0.175)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Dibenzofuran	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Diethylphthalate	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Dimethylphthalate	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Di-n-butylphthalate	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Di-n-octylphthalate	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Fluoranthene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Fluorene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Hexachlorobenzene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Hexachlorobutadiene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Hexachloroethane	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Isophorone	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Naphthalene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Nitrobenzene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
N-Nitrosodimethylamine	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Pentachlorophenol	ND (1.75)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Phenanthrene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Phenol	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211
Pyrene	ND (0.350)		8270D		1	12/15/17 4:32	C7L0225	CL71211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*87 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*80 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*71 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*81 %*		*30-130*				
Surrogate: Phenol-d6		*76 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*105 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (96.2)		9060		1	DEL	12/17/17 17:47	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.49)		6020A		20	NAR	12/13/17 18:40	2.13	100	CL71223
Arsenic	ND (2.43)		6010C		1	KJK	12/16/17 3:54	2.13	100	CL71223
Barium	ND (2.43)		6010C		1	KJK	12/15/17 3:21	2.13	100	CL71223
Beryllium	**0.47** (0.11)		6010C		1	KJK	12/15/17 3:21	2.13	100	CL71223
Cadmium	ND (0.49)		6010C		1	KJK	12/15/17 3:21	2.13	100	CL71223
Chromium	ND (0.97)		6010C		1	KJK	12/15/17 3:21	2.13	100	CL71223
Lead	**4.91** (4.87)		6010C		1	KJK	12/15/17 3:21	2.13	100	CL71223
Mercury	ND (0.015)		7471B		1	MJV	12/13/17 13:33	1.33	40	CL71224
Nickel	ND (2.43)		6010C		1	KJK	12/15/17 3:21	2.13	100	CL71223
Selenium	ND (0.49)		6020A		20	NAR	12/13/17 18:40	2.13	100	CL71223
Silver	ND (0.49)		6010C		1	KJK	12/15/17 3:21	2.13	100	CL71223
Thallium	ND (0.49)		6020A		20	NAR	12/13/17 18:40	2.13	100	CL71223
Vanadium	ND (0.97)		6010C		1	KJK	12/15/17 3:21	2.13	100	CL71223
Zinc	**5.23** (2.43)		6010C		1	KJK	12/15/17 3:21	2.13	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
1,4-Dioxane	ND (0.0879)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
2-Butanone	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
2-Chlorotoluene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
2-Hexanone	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
4-Chlorotoluene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Acetone	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Benzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Bromobenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Bromochloromethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Bromoform	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Bromomethane	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Carbon Disulfide	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Chlorobenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Chloroethane	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Chloroform	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Chloromethane	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Dibromomethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Diethyl Ether	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Di-isopropyl ether	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Ethylbenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Isopropylbenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Methylene Chloride	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Naphthalene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
n-Butylbenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
n-Propylbenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
sec-Butylbenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Styrene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
tert-Butylbenzene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Tetrachloroethene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Tetrahydrofuran	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Toluene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Trichloroethene	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Vinyl Chloride	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Xylene O	ND (0.0044)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Xylene P,M	ND (0.0088)		8260B Low		1	12/13/17 23:29	C7L0188	CL71319
Xylenes (Total)	ND (0.0088)		8260B Low		1	12/13/17 23:29		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*129 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*120 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
4,4´-DDE	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
4,4´-DDT	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Aldrin	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
alpha-BHC	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
alpha-Chlordane	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
beta-BHC	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Chlordane (Total)	ND (0.0212)		8081B		1	12/15/17 4:00	C7L0182	CL71208
delta-BHC	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Dieldrin	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Endosulfan I	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Endosulfan II	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Endrin	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Endrin Ketone	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/15/17 4:00	C7L0182	CL71208
gamma-Chlordane	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Heptachlor	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Hexachlorobenzene	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208
Methoxychlor	ND (0.0026)		8081B		1	12/15/17 4:00	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*98 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*108 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 19:28		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 19:28		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 19:28		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 19:28		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 19:28		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 19:28		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 19:28		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 19:28		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 19:28		CL71114

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*101 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*108 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*94 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 5:41	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 5:41	C7L0310	CL71832
2,4-D	ND (0.048)		8151A		1	12/21/17 5:41	C7L0310	CL71832
2,4-DB	ND (0.049)		8151A		1	12/21/17 5:41	C7L0310	CL71832
Dalapon	ND (0.047)		8151A		1	12/21/17 5:41	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 5:41	C7L0310	CL71832
Dichlorprop	ND (0.048)		8151A		1	12/21/17 5:41	C7L0310	CL71832
Dinoseb	ND (0.049)		8151A		1	12/21/17 5:41	C7L0310	CL71832
MCPA	ND (2.39)		8151A		1	12/21/17 5:41	C7L0310	CL71832
MCPP	ND (2.41)		8151A		1	12/21/17 5:41	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*67 %*		*30-150*
Surrogate: DCAA [2C]	*74 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
1,2-Dichlorobenzene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
1,3-Dichlorobenzene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
1,4-Dichlorobenzene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2,4,5-Trichlorophenol	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2,4,6-Trichlorophenol	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2,4-Dichlorophenol	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2,4-Dimethylphenol	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2,4-Dinitrophenol	ND (1.82)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2,4-Dinitrotoluene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2,6-Dinitrotoluene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2-Chloronaphthalene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2-Chlorophenol	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2-Methylnaphthalene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2-Methylphenol	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
2-Nitrophenol	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
3,3′-Dichlorobenzidine	ND (0.726)		8270D		1	12/15/17 5:06	C7L0225	CL71211
3+4-Methylphenol	ND (0.726)		8270D		1	12/15/17 5:06	C7L0225	CL71211
4-Bromophenyl-phenylether	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
4-Chloroaniline	ND (0.726)		8270D		1	12/15/17 5:06	C7L0225	CL71211
4-Nitrophenol	ND (1.82)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Acenaphthene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Acenaphthylene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Acetophenone	ND (0.726)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Aniline	ND (1.82)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Anthracene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Azobenzene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Benzo(a)anthracene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Benzo(a)pyrene	ND (0.182)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Benzo(b)fluoranthene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Benzo(g,h,i)perylene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Benzo(k)fluoranthene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
bis(2-Chloroethyl)ether	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
bis(2-chloroisopropyl)Ether	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Butylbenzylphthalate	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Chrysene	ND (0.182)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Dibenzo(a,h)Anthracene	ND (0.182)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Dibenzofuran	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Diethylphthalate	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Dimethylphthalate	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Di-n-butylphthalate	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Di-n-octylphthalate	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Fluoranthene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Fluorene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Hexachlorobenzene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Hexachlorobutadiene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Hexachloroethane	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Isophorone	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Naphthalene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Nitrobenzene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
N-Nitrosodimethylamine	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Pentachlorophenol	ND (1.82)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Phenanthrene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Phenol	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211
Pyrene	ND (0.362)		8270D		1	12/15/17 5:06	C7L0225	CL71211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*82 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*94 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*83 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*91 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*73 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*84 %*		*30-130*				
Surrogate: Phenol-d6		*78 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*107 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (102)		9060		1	DEL	12/17/17 18:04	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.43)		6020A		20	NAR	12/13/17 18:46	2.62	100	CL71223
Arsenic	**14.2** (2.13)		6010C		1	KJK	12/16/17 3:58	2.62	100	CL71223
Barium	**25.8** (2.13)		6010C		1	KJK	12/15/17 3:25	2.62	100	CL71223
Beryllium	**0.48** (0.09)		6010C		1	KJK	12/15/17 3:25	2.62	100	CL71223
Cadmium	ND (0.43)		6010C		1	KJK	12/15/17 3:25	2.62	100	CL71223
Chromium	**51.4** (0.85)		6010C		1	KJK	12/15/17 3:25	2.62	100	CL71223
Lead	**31.8** (4.25)		6010C		1	KJK	12/15/17 3:25	2.62	100	CL71223
Mercury	ND (0.032)		7471B		1	MJV	12/13/17 13:35	0.68	40	CL71224
Nickel	**20.5** (2.13)		6010C		1	KJK	12/15/17 3:25	2.62	100	CL71223
Selenium	ND (0.43)		6020A		20	NAR	12/13/17 18:46	2.62	100	CL71223
Silver	ND (0.43)		6010C		1	KJK	12/15/17 3:25	2.62	100	CL71223
Thallium	**0.43** (0.43)		6020A		20	NAR	12/13/17 18:46	2.62	100	CL71223
Vanadium	**14.6** (0.85)		6010C		1	KJK	12/15/17 3:25	2.62	100	CL71223
Zinc	**29.1** (2.13)		6010C		1	KJK	12/15/17 3:25	2.62	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
1,4-Dioxane	ND (0.0832)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
2-Butanone	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
2-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
2-Hexanone	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
4-Chlorotoluene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
4-Methyl-2-Pentanone	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Acetone	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Benzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Bromobenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Bromochloromethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Bromoform	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Bromomethane	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Carbon Disulfide	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Chlorobenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Chloroethane	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Chloroform	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Chloromethane	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Dibromomethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Dichlorodifluoromethane	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Diethyl Ether	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Di-isopropyl ether	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Ethylbenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Isopropylbenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Methylene Chloride	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Naphthalene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
n-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
n-Propylbenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
sec-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Styrene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
tert-Butylbenzene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Tetrachloroethene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Tetrahydrofuran	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Toluene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Trichloroethene	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Vinyl Chloride	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Xylene O	ND (0.0042)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Xylene P,M	ND (0.0083)		8260B Low		1	12/13/17 23:54	C7L0188	CL71319
Xylenes (Total)	ND (0.0083)		8260B Low		1	12/13/17 23:54		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*125 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*117 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
4,4´-DDE	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
4,4´-DDT	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Aldrin	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
alpha-BHC	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
alpha-Chlordane	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
beta-BHC	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Chlordane (Total)	ND (0.0230)		8081B		1	12/15/17 4:29	C7L0182	CL71208
delta-BHC	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Dieldrin	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Endosulfan I	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Endosulfan II	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Endrin	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Endrin Ketone	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/15/17 4:29	C7L0182	CL71208
gamma-Chlordane	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Heptachlor	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Hexachlorobenzene	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208
Methoxychlor	ND (0.0029)		8081B		1	12/15/17 4:29	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/12/17 19:47		CL71114
Aroclor 1221	ND (0.06)		8082A		1	12/12/17 19:47		CL71114
Aroclor 1232	ND (0.06)		8082A		1	12/12/17 19:47		CL71114
Aroclor 1242	ND (0.06)		8082A		1	12/12/17 19:47		CL71114
Aroclor 1248	ND (0.06)		8082A		1	12/12/17 19:47		CL71114
Aroclor 1254	ND (0.06)		8082A		1	12/12/17 19:47		CL71114
Aroclor 1260	ND (0.06)		8082A		1	12/12/17 19:47		CL71114
Aroclor 1262	ND (0.06)		8082A		1	12/12/17 19:47		CL71114
Aroclor 1268	ND (0.06)		8082A		1	12/12/17 19:47		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*97 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*86 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 6:13	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 6:13	C7L0310	CL71832
2,4-D	ND (0.052)		8151A		1	12/21/17 6:13	C7L0310	CL71832
2,4-DB	ND (0.052)		8151A		1	12/21/17 6:13	C7L0310	CL71832
Dalapon	ND (0.050)		8151A		1	12/21/17 6:13	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 6:13	C7L0310	CL71832
Dichlorprop	ND (0.052)		8151A		1	12/21/17 6:13	C7L0310	CL71832
Dinoseb	ND (0.052)		8151A		1	12/21/17 6:13	C7L0310	CL71832
MCPA	ND (2.57)		8151A		1	12/21/17 6:13	C7L0310	CL71832
MCPP	ND (2.59)		8151A		1	12/21/17 6:13	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*60 %*		*30-150*
Surrogate: DCAA [2C]	*73 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
1,2-Dichlorobenzene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
1,3-Dichlorobenzene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
1,4-Dichlorobenzene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2,4,5-Trichlorophenol	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2,4,6-Trichlorophenol	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2,4-Dichlorophenol	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2,4-Dimethylphenol	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2,4-Dinitrophenol	ND (1.99)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2,4-Dinitrotoluene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2,6-Dinitrotoluene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2-Chloronaphthalene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2-Chlorophenol	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2-Methylnaphthalene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2-Methylphenol	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
2-Nitrophenol	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
3,3′-Dichlorobenzidine	ND (0.796)		8270D		1	12/15/17 0:20	C7L0208	CL71211
3+4-Methylphenol	ND (0.796)		8270D		1	12/15/17 0:20	C7L0208	CL71211
4-Bromophenyl-phenylether	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
4-Chloroaniline	ND (0.796)		8270D		1	12/15/17 0:20	C7L0208	CL71211
4-Nitrophenol	ND (1.99)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Acenaphthene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Acenaphthylene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Acetophenone	ND (0.796)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Aniline	ND (1.99)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Anthracene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Azobenzene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Benzo(a)anthracene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Benzo(a)pyrene	ND (0.199)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Benzo(b)fluoranthene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Benzo(g,h,i)perylene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Benzo(k)fluoranthene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
bis(2-Chloroethyl)ether	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
bis(2-chloroisopropyl)Ether	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Butylbenzylphthalate	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Chrysene	ND (0.199)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Dibenzo(a,h)Anthracene	ND (0.199)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Dibenzofuran	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Diethylphthalate	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Dimethylphthalate	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Di-n-butylphthalate	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Di-n-octylphthalate	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Fluoranthene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Fluorene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Hexachlorobenzene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Hexachlorobutadiene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Hexachloroethane	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Isophorone	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Naphthalene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Nitrobenzene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
N-Nitrosodimethylamine	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Pentachlorophenol	ND (1.99)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Phenanthrene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Phenol	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211
Pyrene	ND (0.398)		8270D		1	12/15/17 0:20	C7L0208	CL71211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*83 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*118 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*90 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*122 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*92 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*101 %*		*30-130*				
Surrogate: Phenol-d6		*92 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*100 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (88.8)		9060		1	DEL	12/17/17 18:26	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.50)		6020A		20	NAR	12/13/17 18:52	2.22	100	CL71223
Arsenic	**11.6** (2.51)		6010C		1	KJK	12/16/17 4:02	2.22	100	CL71223
Barium	**24.3** (2.51)		6010C		1	KJK	12/15/17 3:29	2.22	100	CL71223
Beryllium	**0.38** (0.11)		6010C		1	KJK	12/15/17 3:29	2.22	100	CL71223
Cadmium	ND (0.50)		6010C		1	KJK	12/15/17 3:29	2.22	100	CL71223
Chromium	**50.7** (1.00)		6010C		1	KJK	12/15/17 3:29	2.22	100	CL71223
Lead	**27.5** (5.02)		6010C		1	KJK	12/15/17 3:29	2.22	100	CL71223
Mercury	ND (0.029)		7471B		1	MJV	12/13/17 13:37	0.75	40	CL71224
Nickel	**20.6** (2.51)		6010C		1	KJK	12/15/17 3:29	2.22	100	CL71223
Selenium	ND (0.50)		6020A		20	NAR	12/13/17 18:52	2.22	100	CL71223
Silver	ND (0.50)		6010C		1	KJK	12/15/17 3:29	2.22	100	CL71223
Thallium	ND (0.50)		6020A		20	NAR	12/13/17 18:52	2.22	100	CL71223
Vanadium	**15.2** (1.00)		6010C		1	KJK	12/15/17 3:29	2.22	100	CL71223
Zinc	**27.6** (2.51)		6010C		1	KJK	12/15/17 3:29	2.22	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
1,4-Dioxane	ND (0.0858)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
2-Butanone	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
2-Chlorotoluene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
2-Hexanone	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
4-Chlorotoluene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
4-Methyl-2-Pentanone	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Acetone	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Benzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Bromobenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Bromochloromethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Bromoform	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Bromomethane	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Carbon Disulfide	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Chlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Chloroethane	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Chloroform	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Chloromethane	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Dibromomethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Dichlorodifluoromethane	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Diethyl Ether	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Di-isopropyl ether	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Ethylbenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Isopropylbenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Methylene Chloride	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Naphthalene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
n-Butylbenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
n-Propylbenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
sec-Butylbenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Styrene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
tert-Butylbenzene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Tetrachloroethene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Tetrahydrofuran	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Toluene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Trichloroethene	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Vinyl Chloride	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Xylene O	ND (0.0043)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Xylene P,M	ND (0.0086)		8260B Low		1	12/14/17 16:35	C7L0221	CL71434
Xylenes (Total)	ND (0.0086)		8260B Low		1	12/14/17 16:35		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*116 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*108 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
4,4´-DDE	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
4,4´-DDT	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Aldrin	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
alpha-BHC	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
alpha-Chlordane	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
beta-BHC	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Chlordane (Total)	ND (0.0232)		8081B		1	12/15/17 4:59	C7L0182	CL71208
delta-BHC	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Dieldrin	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Endosulfan I	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Endosulfan II	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Endrin	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Endrin Ketone	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/15/17 4:59	C7L0182	CL71208
gamma-Chlordane	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Heptachlor	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Hexachlorobenzene	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208
Methoxychlor	ND (0.0029)		8081B		1	12/15/17 4:59	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*91 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/12/17 20:05		CL71114
Aroclor 1221	ND (0.05)		8082A		1	12/12/17 20:05		CL71114
Aroclor 1232	ND (0.05)		8082A		1	12/12/17 20:05		CL71114
Aroclor 1242	ND (0.05)		8082A		1	12/12/17 20:05		CL71114
Aroclor 1248	ND (0.05)		8082A		1	12/12/17 20:05		CL71114
Aroclor 1254	ND (0.05)		8082A		1	12/12/17 20:05		CL71114
Aroclor 1260	ND (0.05)		8082A		1	12/12/17 20:05		CL71114
Aroclor 1262	ND (0.05)		8082A		1	12/12/17 20:05		CL71114
Aroclor 1268	ND (0.05)		8082A		1	12/12/17 20:05		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*97 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*86 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 6:44	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 6:44	C7L0310	CL71832
2,4-D	ND (0.052)		8151A		1	12/21/17 6:44	C7L0310	CL71832
2,4-DB	ND (0.052)		8151A		1	12/21/17 6:44	C7L0310	CL71832
Dalapon	ND (0.050)		8151A		1	12/21/17 6:44	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 6:44	C7L0310	CL71832
Dichlorprop	ND (0.052)		8151A		1	12/21/17 6:44	C7L0310	CL71832
Dinoseb	ND (0.052)		8151A		1	12/21/17 6:44	C7L0310	CL71832
MCPA	ND (2.57)		8151A		1	12/21/17 6:44	C7L0310	CL71832
MCPP	ND (2.60)		8151A		1	12/21/17 6:44	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*69 %*		*30-150*
Surrogate: DCAA [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
1,2-Dichlorobenzene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
1,3-Dichlorobenzene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
1,4-Dichlorobenzene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2,4,5-Trichlorophenol	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2,4,6-Trichlorophenol	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2,4-Dichlorophenol	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2,4-Dimethylphenol	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2,4-Dinitrophenol	ND (1.98)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2,4-Dinitrotoluene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2,6-Dinitrotoluene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2-Chloronaphthalene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2-Chlorophenol	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2-Methylnaphthalene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2-Methylphenol	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
2-Nitrophenol	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
3,3′-Dichlorobenzidine	ND (0.792)		8270D		1	12/15/17 0:55	C7L0208	CL71211
3+4-Methylphenol	ND (0.792)		8270D		1	12/15/17 0:55	C7L0208	CL71211
4-Bromophenyl-phenylether	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
4-Chloroaniline	ND (0.792)		8270D		1	12/15/17 0:55	C7L0208	CL71211
4-Nitrophenol	ND (1.98)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Acenaphthene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Acenaphthylene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Acetophenone	ND (0.792)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Aniline	ND (1.98)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Anthracene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Azobenzene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Benzo(a)anthracene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Benzo(a)pyrene	ND (0.198)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Benzo(b)fluoranthene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Benzo(g,h,i)perylene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Benzo(k)fluoranthene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
bis(2-Chloroethyl)ether	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
bis(2-chloroisopropyl)Ether	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Butylbenzylphthalate	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Chrysene	ND (0.198)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Dibenzo(a,h)Anthracene	ND (0.198)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Dibenzofuran	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Diethylphthalate	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Dimethylphthalate	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Di-n-butylphthalate	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Di-n-octylphthalate	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Fluoranthene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Fluorene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Hexachlorobenzene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Hexachlorobutadiene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Hexachloroethane	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Isophorone	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Naphthalene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Nitrobenzene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
N-Nitrosodimethylamine	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Pentachlorophenol	ND (1.98)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Phenanthrene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Phenol	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211
Pyrene	ND (0.395)		8270D		1	12/15/17 0:55	C7L0208	CL71211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*75 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*96 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*77 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*79 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*88 %*		*30-130*				
Surrogate: Phenol-d6		*77 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*90 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (71.8)		9060		1	DEL	12/17/17 18:49	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.48)		6020A		20	NAR	12/13/17 18:58	2.33	100	CL71223
Arsenic	**13.5** (2.38)		6010C		1	KJK	12/16/17 4:06	2.33	100	CL71223
Barium	**28.9** (2.38)		6010C		1	KJK	12/15/17 3:33	2.33	100	CL71223
Beryllium	**0.51** (0.10)		6010C		1	KJK	12/15/17 3:33	2.33	100	CL71223
Cadmium	ND (0.48)		6010C		1	KJK	12/15/17 3:33	2.33	100	CL71223
Chromium	**52.3** (0.95)		6010C		1	KJK	12/15/17 3:33	2.33	100	CL71223
Lead	**29.5** (4.77)		6010C		1	KJK	12/15/17 3:33	2.33	100	CL71223
Mercury	ND (0.020)		7471B		1	MJV	12/13/17 13:39	1.1	40	CL71224
Nickel	**20.0** (2.38)		6010C		1	KJK	12/15/17 3:33	2.33	100	CL71223
Selenium	ND (0.48)		6020A		20	NAR	12/13/17 18:58	2.33	100	CL71223
Silver	ND (0.48)		6010C		1	KJK	12/15/17 3:33	2.33	100	CL71223
Thallium	ND (0.48)		6020A		20	NAR	12/13/17 18:58	2.33	100	CL71223
Vanadium	**15.2** (0.95)		6010C		1	KJK	12/15/17 3:33	2.33	100	CL71223
Zinc	**24.8** (2.38)		6010C		1	KJK	12/15/17 3:33	2.33	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
1,4-Dioxane	ND (0.0842)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
2-Butanone	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
2-Chlorotoluene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
2-Hexanone	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
4-Chlorotoluene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
4-Methyl-2-Pentanone	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Acetone	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Benzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Bromobenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Bromochloromethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Bromoform	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Bromomethane	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Carbon Disulfide	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Chlorobenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Chloroethane	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Chloroform	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Chloromethane	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Dibromomethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Dichlorodifluoromethane	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Diethyl Ether	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Di-isopropyl ether	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Ethylbenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Isopropylbenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Methylene Chloride	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Naphthalene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
n-Butylbenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
n-Propylbenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
sec-Butylbenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Styrene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
tert-Butylbenzene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Tetrachloroethene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Tetrahydrofuran	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Toluene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Trichloroethene	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Vinyl Chloride	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Xylene O	ND (0.0042)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Xylene P,M	ND (0.0084)		8260B Low		1	12/14/17 17:00	C7L0221	CL71434
Xylenes (Total)	ND (0.0084)		8260B Low		1	12/14/17 17:00		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*118 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*110 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
4,4´-DDE	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
4,4´-DDT	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Aldrin	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
alpha-BHC	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
alpha-Chlordane	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
beta-BHC	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Chlordane (Total)	ND (0.0222)		8081B		1	12/15/17 5:28	C7L0182	CL71208
delta-BHC	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Dieldrin	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Endosulfan I	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Endosulfan II	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Endrin	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Endrin Ketone	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/15/17 5:28	C7L0182	CL71208
gamma-Chlordane	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Heptachlor	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Hexachlorobenzene	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208
Methoxychlor	ND (0.0028)		8081B		1	12/15/17 5:28	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*106 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/12/17 20:24		CL71114
Aroclor 1221	ND (0.06)		8082A		1	12/12/17 20:24		CL71114
Aroclor 1232	ND (0.06)		8082A		1	12/12/17 20:24		CL71114
Aroclor 1242	ND (0.06)		8082A		1	12/12/17 20:24		CL71114
Aroclor 1248	ND (0.06)		8082A		1	12/12/17 20:24		CL71114
Aroclor 1254	ND (0.06)		8082A		1	12/12/17 20:24		CL71114
Aroclor 1260	ND (0.06)		8082A		1	12/12/17 20:24		CL71114
Aroclor 1262	ND (0.06)		8082A		1	12/12/17 20:24		CL71114
Aroclor 1268	ND (0.06)		8082A		1	12/12/17 20:24		CL71114

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*88 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*85 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 7:16	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 7:16	C7L0310	CL71832
2,4-D	ND (0.051)		8151A		1	12/21/17 7:16	C7L0310	CL71832
2,4-DB	ND (0.052)		8151A		1	12/21/17 7:16	C7L0310	CL71832
Dalapon	ND (0.050)		8151A		1	12/21/17 7:16	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 7:16	C7L0310	CL71832
Dichlorprop	ND (0.051)		8151A		1	12/21/17 7:16	C7L0310	CL71832
Dinoseb	ND (0.052)		8151A		1	12/21/17 7:16	C7L0310	CL71832
MCPA	ND (2.53)		8151A		1	12/21/17 7:16	C7L0310	CL71832
MCPP	ND (2.56)		8151A		1	12/21/17 7:16	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*67 %*		*30-150*
Surrogate: DCAA [2C]	*84 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
1,2-Dichlorobenzene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
1,3-Dichlorobenzene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
1,4-Dichlorobenzene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2,4,5-Trichlorophenol	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2,4,6-Trichlorophenol	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2,4-Dichlorophenol	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2,4-Dimethylphenol	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2,4-Dinitrophenol	ND (1.99)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2,4-Dinitrotoluene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2,6-Dinitrotoluene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2-Chloronaphthalene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2-Chlorophenol	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2-Methylnaphthalene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2-Methylphenol	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
2-Nitrophenol	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
3,3′-Dichlorobenzidine	ND (0.794)		8270D		1	12/15/17 1:30	C7L0208	CL71211
3+4-Methylphenol	ND (0.794)		8270D		1	12/15/17 1:30	C7L0208	CL71211
4-Bromophenyl-phenylether	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
4-Chloroaniline	ND (0.794)		8270D		1	12/15/17 1:30	C7L0208	CL71211
4-Nitrophenol	ND (1.99)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Acenaphthene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Acenaphthylene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Acetophenone	ND (0.794)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Aniline	ND (1.99)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Anthracene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Azobenzene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Benzo(a)anthracene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Benzo(a)pyrene	ND (0.199)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Benzo(b)fluoranthene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Benzo(g,h,i)perylene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Benzo(k)fluoranthene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
bis(2-Chloroethyl)ether	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
bis(2-chloroisopropyl)Ether	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
bis(2-Ethylhexyl)phthalate	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Butylbenzylphthalate	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Chrysene	ND (0.199)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Dibenzo(a,h)Anthracene	ND (0.199)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Dibenzofuran	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Diethylphthalate	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Dimethylphthalate	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Di-n-butylphthalate	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Di-n-octylphthalate	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Fluoranthene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Fluorene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Hexachlorobenzene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Hexachlorobutadiene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Hexachloroethane	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Indeno(1,2,3-cd)Pyrene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Isophorone	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Naphthalene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Nitrobenzene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
N-Nitrosodimethylamine	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Pentachlorophenol	ND (1.99)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Phenanthrene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Phenol	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211
Pyrene	ND (0.396)		8270D		1	12/15/17 1:30	C7L0208	CL71211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*80 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*98 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*80 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*88 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*110 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*93 %*		*30-130*				
Surrogate: Phenol-d6		*79 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*88 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (66.0)		9060		1	DEL	12/17/17 19:10	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.50)		6020A		20	NAR	12/13/17 19:04	2.23	100	CL71223
Arsenic	**12.3** (2.48)		6010C		1	KJK	12/16/17 4:10	2.23	100	CL71223
Barium	**27.2** (2.48)		6010C		1	KJK	12/15/17 3:37	2.23	100	CL71223
Beryllium	**0.41** (0.11)		6010C		1	KJK	12/15/17 3:37	2.23	100	CL71223
Cadmium	ND (0.50)		6010C		1	KJK	12/15/17 3:37	2.23	100	CL71223
Chromium	**53.4** (0.99)		6010C		1	KJK	12/15/17 3:37	2.23	100	CL71223
Lead	**26.0** (4.96)		6010C		1	KJK	12/15/17 3:37	2.23	100	CL71223
Mercury	ND (0.038)		7471B		1	MJV	12/13/17 13:41	0.58	40	CL71224
Nickel	**20.6** (2.48)		6010C		1	KJK	12/15/17 3:37	2.23	100	CL71223
Selenium	ND (0.50)		6020A		20	NAR	12/13/17 19:04	2.23	100	CL71223
Silver	ND (0.50)		6010C		1	KJK	12/15/17 3:37	2.23	100	CL71223
Thallium	ND (0.50)		6020A		20	NAR	12/13/17 19:04	2.23	100	CL71223
Vanadium	**15.2** (0.99)		6010C		1	KJK	12/15/17 3:37	2.23	100	CL71223
Zinc	**26.1** (2.48)		6010C		1	KJK	12/15/17 3:37	2.23	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
1,4-Dioxane	ND (0.0850)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
2-Butanone	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
2-Chlorotoluene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
2-Hexanone	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
4-Chlorotoluene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
4-Methyl-2-Pentanone	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Acetone	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Benzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Bromobenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Bromochloromethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Bromoform	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Bromomethane	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Carbon Disulfide	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Chlorobenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Chloroethane	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Chloroform	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Chloromethane	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Dibromomethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Dichlorodifluoromethane	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Diethyl Ether	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Di-isopropyl ether	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Ethylbenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Isopropylbenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Methylene Chloride	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Naphthalene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
n-Butylbenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
n-Propylbenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
sec-Butylbenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Styrene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
tert-Butylbenzene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Tetrachloroethene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Tetrahydrofuran	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Toluene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Trichloroethene	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Vinyl Chloride	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Xylene O	ND (0.0043)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Xylene P,M	ND (0.0085)		8260B Low		1	12/14/17 17:25	C7L0221	CL71434
Xylenes (Total)	ND (0.0085)		8260B Low		1	12/14/17 17:25		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*118 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*109 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
4,4´-DDE	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
4,4´-DDT	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Aldrin	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
alpha-BHC	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
alpha-Chlordane	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
beta-BHC	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Chlordane (Total)	ND (0.0226)		8081B		1	12/15/17 5:57	C7L0182	CL71208
delta-BHC	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Dieldrin	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Endosulfan I	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Endosulfan II	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Endrin	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Endrin Ketone	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/15/17 5:57	C7L0182	CL71208
gamma-Chlordane	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Heptachlor	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Hexachlorobenzene	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208
Methoxychlor	ND (0.0028)		8081B		1	12/15/17 5:57	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*99 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*111 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/12/17 20:43		CL71114
Aroclor 1221	ND (0.06)		8082A		1	12/12/17 20:43		CL71114
Aroclor 1232	ND (0.06)		8082A		1	12/12/17 20:43		CL71114
Aroclor 1242	ND (0.06)		8082A		1	12/12/17 20:43		CL71114
Aroclor 1248	ND (0.06)		8082A		1	12/12/17 20:43		CL71114
Aroclor 1254	ND (0.06)		8082A		1	12/12/17 20:43		CL71114
Aroclor 1260	ND (0.06)		8082A		1	12/12/17 20:43		CL71114
Aroclor 1262	ND (0.06)		8082A		1	12/12/17 20:43		CL71114
Aroclor 1268	ND (0.06)		8082A		1	12/12/17 20:43		CL71114

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*102 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*87 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/21/17 7:48	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/21/17 7:48	C7L0310	CL71832
2,4-D	ND (0.051)		8151A		1	12/21/17 7:48	C7L0310	CL71832
2,4-DB	ND (0.052)		8151A		1	12/21/17 7:48	C7L0310	CL71832
Dalapon	ND (0.050)		8151A		1	12/21/17 7:48	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 7:48	C7L0310	CL71832
Dichlorprop	ND (0.051)		8151A		1	12/21/17 7:48	C7L0310	CL71832
Dinoseb	ND (0.052)		8151A		1	12/21/17 7:48	C7L0310	CL71832
MCPA [2C]	# ND (2.54)		8151A		1	12/21/17 7:48	C7L0310	CL71832
MCPP [2C]	# ND (2.57)		8151A		1	12/21/17 7:48	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*65 %*		*30-150*
Surrogate: DCAA [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
1,2-Dichlorobenzene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
1,3-Dichlorobenzene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
1,4-Dichlorobenzene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2,4,5-Trichlorophenol	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2,4,6-Trichlorophenol	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2,4-Dichlorophenol	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2,4-Dimethylphenol	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2,4-Dinitrophenol	ND (1.98)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2,4-Dinitrotoluene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2,6-Dinitrotoluene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2-Chloronaphthalene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2-Chlorophenol	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2-Methylnaphthalene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2-Methylphenol	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
2-Nitrophenol	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
3,3′-Dichlorobenzidine	ND (0.790)		8270D		1	12/15/17 2:05	C7L0208	CL71216
3+4-Methylphenol	ND (0.790)		8270D		1	12/15/17 2:05	C7L0208	CL71216
4-Bromophenyl-phenylether	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
4-Chloroaniline	ND (0.790)		8270D		1	12/15/17 2:05	C7L0208	CL71216
4-Nitrophenol	ND (1.98)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Acenaphthene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Acenaphthylene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Acetophenone	ND (0.790)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Aniline	ND (1.98)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Anthracene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Azobenzene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Benzo(a)anthracene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Benzo(a)pyrene	ND (0.198)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Benzo(b)fluoranthene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Benzo(g,h,i)perylene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Benzo(k)fluoranthene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
bis(2-Chloroethyl)ether	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
bis(2-chloroisopropyl)Ether	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
bis(2-Ethylhexyl)phthalate	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Butylbenzylphthalate	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Chrysene	ND (0.198)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Dibenzo(a,h)Anthracene	ND (0.198)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Dibenzofuran	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Diethylphthalate	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Dimethylphthalate	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Di-n-butylphthalate	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Di-n-octylphthalate	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Fluoranthene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Fluorene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Hexachlorobenzene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Hexachlorobutadiene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Hexachloroethane	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Indeno(1,2,3-cd)Pyrene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Isophorone	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Naphthalene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Nitrobenzene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
N-Nitrosodimethylamine	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Pentachlorophenol	ND (1.98)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Phenanthrene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Phenol	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216
Pyrene	ND (0.394)		8270D		1	12/15/17 2:05	C7L0208	CL71216

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*95 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*77 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*86 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*114 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*89 %*		*30-130*				
Surrogate: Phenol-d6		*79 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*92 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (91.4)		9060		1	DEL	12/17/17 20:06	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.47)		6020A		20	NAR	12/13/17 19:09	2.37	100	CL71223
Arsenic	**11.5** (2.37)		6010C		1	KJK	12/16/17 4:26	2.37	100	CL71223
Barium	**24.4** (2.37)		6010C		1	KJK	12/15/17 3:41	2.37	100	CL71223
Beryllium	**0.39** (0.10)		6010C		1	KJK	12/15/17 3:41	2.37	100	CL71223
Cadmium	ND (0.47)		6010C		1	KJK	12/15/17 3:41	2.37	100	CL71223
Chromium	**49.7** (0.95)		6010C		1	KJK	12/15/17 3:41	2.37	100	CL71223
Lead	**30.8** (4.73)		6010C		1	KJK	12/15/17 3:41	2.37	100	CL71223
Mercury	ND (0.034)		7471B		1	MJV	12/13/17 13:47	0.65	40	CL71224
Nickel	**20.0** (2.37)		6010C		1	KJK	12/15/17 3:41	2.37	100	CL71223
Selenium	ND (0.47)		6020A		20	NAR	12/13/17 19:09	2.37	100	CL71223
Silver	ND (0.47)		6010C		1	KJK	12/15/17 3:41	2.37	100	CL71223
Thallium	ND (0.47)		6020A		20	NAR	12/13/17 19:09	2.37	100	CL71223
Vanadium	**14.7** (0.95)		6010C		1	KJK	12/15/17 3:41	2.37	100	CL71223
Zinc	**26.8** (2.37)		6010C		1	KJK	12/15/17 3:41	2.37	100	CL71223

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
1,4-Dioxane	ND (0.0890)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
2-Butanone	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
2-Chlorotoluene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
2-Hexanone	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
4-Chlorotoluene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
4-Methyl-2-Pentanone	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Acetone	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Benzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Bromobenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Bromochloromethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Bromoform	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Bromomethane	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Carbon Disulfide	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Chlorobenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Chloroethane	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Chloroform	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Chloromethane	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Dibromomethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Dichlorodifluoromethane	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Diethyl Ether	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Di-isopropyl ether	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Ethylbenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Isopropylbenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Methylene Chloride	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Naphthalene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
n-Butylbenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
n-Propylbenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
sec-Butylbenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Styrene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
tert-Butylbenzene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Tetrachloroethene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Tetrahydrofuran	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Toluene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Trichloroethene	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Vinyl Chloride	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Xylene O	ND (0.0044)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Xylene P,M	ND (0.0089)		8260B Low		1	12/14/17 17:50	C7L0221	CL71434
Xylenes (Total)	ND (0.0089)		8260B Low		1	12/14/17 17:50		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*119 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*111 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
4,4´-DDE	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
4,4´-DDT	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Aldrin	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
alpha-BHC	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
alpha-Chlordane	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
beta-BHC	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Chlordane (Total)	ND (0.0235)		8081B		1	12/15/17 6:27	C7L0182	CL71208
delta-BHC	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Dieldrin	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Endosulfan I	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Endosulfan II	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Endrin	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Endrin Ketone	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	12/15/17 6:27	C7L0182	CL71208
gamma-Chlordane	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Heptachlor	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Hexachlorobenzene	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208
Methoxychlor	ND (0.0029)		8081B		1	12/15/17 6:27	C7L0182	CL71208

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*104 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*114 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/12/17 21:01		CL71114
Aroclor 1221	ND (0.06)		8082A		1	12/12/17 21:01		CL71114
Aroclor 1232	ND (0.06)		8082A		1	12/12/17 21:01		CL71114
Aroclor 1242	ND (0.06)		8082A		1	12/12/17 21:01		CL71114
Aroclor 1248	ND (0.06)		8082A		1	12/12/17 21:01		CL71114
Aroclor 1254	ND (0.06)		8082A		1	12/12/17 21:01		CL71114
Aroclor 1260	ND (0.06)		8082A		1	12/12/17 21:01		CL71114
Aroclor 1262	ND (0.06)		8082A		1	12/12/17 21:01		CL71114
Aroclor 1268	ND (0.06)		8082A		1	12/12/17 21:01		CL71114

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*55 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*58 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*42 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*46 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.011)		8151A		1	12/21/17 8:20	C7L0310	CL71832
2,4,5-TP (Silvex)	ND (0.011)		8151A		1	12/21/17 8:20	C7L0310	CL71832
2,4-D	ND (0.052)		8151A		1	12/21/17 8:20	C7L0310	CL71832
2,4-DB	ND (0.053)		8151A		1	12/21/17 8:20	C7L0310	CL71832
Dalapon	ND (0.051)		8151A		1	12/21/17 8:20	C7L0310	CL71832
Dicamba	ND (0.010)		8151A		1	12/21/17 8:20	C7L0310	CL71832
Dichlorprop	ND (0.052)		8151A		1	12/21/17 8:20	C7L0310	CL71832
Dinoseb	ND (0.053)		8151A		1	12/21/17 8:20	C7L0310	CL71832
MCPA	ND (2.58)		8151A		1	12/21/17 8:20	C7L0310	CL71832
MCPP	ND (2.61)		8151A		1	12/21/17 8:20	C7L0310	CL71832

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*62 %*		*30-150*
Surrogate: DCAA [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
1,2-Dichlorobenzene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
1,3-Dichlorobenzene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
1,4-Dichlorobenzene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2,4,5-Trichlorophenol	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2,4,6-Trichlorophenol	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2,4-Dichlorophenol	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2,4-Dimethylphenol	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2,4-Dinitrophenol	ND (1.92)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2,4-Dinitrotoluene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2,6-Dinitrotoluene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2-Chloronaphthalene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2-Chlorophenol	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2-Methylnaphthalene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2-Methylphenol	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
2-Nitrophenol	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
3,3′-Dichlorobenzidine	ND (0.768)		8270D		1	12/15/17 2:40	C7L0208	CL71216
3+4-Methylphenol	ND (0.768)		8270D		1	12/15/17 2:40	C7L0208	CL71216
4-Bromophenyl-phenylether	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
4-Chloroaniline	ND (0.768)		8270D		1	12/15/17 2:40	C7L0208	CL71216
4-Nitrophenol	ND (1.92)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Acenaphthene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Acenaphthylene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Acetophenone	ND (0.768)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Aniline	ND (1.92)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Anthracene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Azobenzene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Benzo(a)anthracene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Benzo(a)pyrene	ND (0.192)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Benzo(b)fluoranthene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Benzo(g,h,i)perylene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Benzo(k)fluoranthene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
bis(2-Chloroethyl)ether	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
bis(2-chloroisopropyl)Ether	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
bis(2-Ethylhexyl)phthalate	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Butylbenzylphthalate	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Chrysene	ND (0.192)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Dibenzo(a,h)Anthracene	ND (0.192)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Dibenzofuran	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Diethylphthalate	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Dimethylphthalate	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Di-n-butylphthalate	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Di-n-octylphthalate	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Fluoranthene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Fluorene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Hexachlorobenzene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Hexachlorobutadiene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Hexachloroethane	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Indeno(1,2,3-cd)Pyrene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Isophorone	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Naphthalene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Nitrobenzene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
N-Nitrosodimethylamine	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Pentachlorophenol	ND (1.92)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Phenanthrene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Phenol	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216
Pyrene	ND (0.384)		8270D		1	12/15/17 2:40	C7L0208	CL71216

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*95 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*79 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*87 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*118 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*89 %*		*30-130*				
Surrogate: Phenol-d6		*80 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*91 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Total Organic Carbon (Average)	ND (80.0)		9060		1	DEL	12/17/17 20:24	mg/kg dry wt	[CALC]
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
1,4-Dioxane	ND (0.100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
2-Butanone	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
2-Chlorotoluene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
2-Hexanone	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
4-Chlorotoluene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
4-Methyl-2-Pentanone	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Acetone	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Benzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Bromobenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Bromochloromethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Bromoform	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Bromomethane	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Carbon Disulfide	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Chlorobenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Chloroethane	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Chloroform	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Chloromethane	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Dibromochloromethane	ND (0.0020)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Dibromomethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Dichlorodifluoromethane	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Diethyl Ether	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Di-isopropyl ether	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Ethylbenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Isopropylbenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Methylene Chloride	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Naphthalene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
n-Butylbenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
n-Propylbenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
sec-Butylbenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Styrene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
tert-Butylbenzene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Tetrachloroethene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Tetrahydrofuran	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Toluene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Trichloroethene	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Vinyl Chloride	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Xylene O	ND (0.0050)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Xylene P,M	ND (0.0100)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434
Xylenes (Total)	ND (0.0075)		8260B Low		1	12/14/17 15:20	C7L0221	CL71434

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*110 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*105 %*		*70-130*
Surrogate: Toluene-d8	*100 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
				Total Metals						
Batch CL71223 - 3050B										
Blank										
Antimony	ND	0.50	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	0.50	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	0.50	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	56.0	4.72	mg/kg wet	48.00		117	80-120			
Arsenic	109	9.43	mg/kg wet	123.0		88	80-120			
Barium	204	9.43	mg/kg wet	253.0		81	66-134			
Beryllium	180	0.42	mg/kg wet	192.0		94	80-120			
Cadmium	207	1.89	mg/kg wet	224.0		93	80-120			
Chromium	169	3.77	mg/kg wet	179.0		94	80-120			
Lead	140	18.9	mg/kg wet	145.0		96	80-120			
Nickel	126	9.43	mg/kg wet	143.0		88	80-120			
Selenium	39.3	4.72	mg/kg wet	42.40		93	80-120			
Silver	85.3	1.89	mg/kg wet	81.60		105	80-120			
Thallium	50.9	4.72	mg/kg wet	52.00		98	80-120			
Vanadium	64.6	3.77	mg/kg wet	72.30		89	80-120			
Zinc	705	9.43	mg/kg wet	770.0		92	80-120			
LCS Dup										
Antimony	55.5	4.55	mg/kg wet	48.00		116	80-120	1	30	
Arsenic	109	9.09	mg/kg wet	123.0		88	80-120	0.1	20	
Barium	188	9.09	mg/kg wet	253.0		74	66-134	8	20	
Beryllium	181	0.40	mg/kg wet	192.0		94	80-120	0.5	20	
Cadmium	204	1.82	mg/kg wet	224.0		91	80-120	2	20	
Chromium	167	3.64	mg/kg wet	179.0		94	80-120	1	20	
Lead	138	18.2	mg/kg wet	145.0		95	80-120	1	20	
Nickel	122	9.09	mg/kg wet	143.0		86	80-120	3	20	
Selenium	39.7	4.55	mg/kg wet	42.40		94	80-120	0.9	30	
Silver	84.0	1.82	mg/kg wet	81.60		103	80-120	1	20	
Thallium	51.1	4.55	mg/kg wet	52.00		98	80-120	0.6	30	
Vanadium	62.5	3.64	mg/kg wet	72.30		86	80-120	3	20	
Zinc	694	9.09	mg/kg wet	770.0		90	80-120	2	20	
Batch CL71224 - 7471B										
Blank										

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CL71224 - 7471B										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	17.2	1.80	mg/kg wet	17.80		97	80-120			
LCS Dup										
Mercury	18.6	1.74	mg/kg wet	17.80		104	80-120	8	20	
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0557*		mg/kg wet	*0.05000*		*111*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0477*		mg/kg wet	*0.05000*		*95*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0537*		mg/kg wet	*0.05000*		*107*	*70-130*			
Surrogate: Toluene-d8	*0.0499*		mg/kg wet	*0.05000*		*100*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0627	0.0050	mg/kg wet	0.05000		125	70-130			
1,1,2,2-Tetrachloroethane	0.0462	0.0020	mg/kg wet	0.05000		92	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
1,1,2-Trichloroethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
1,1-Dichloroethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,1-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloropropene	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,2,3-Trichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichloropropane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,4-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dibromo-3-Chloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dibromoethane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichloroethane	0.0586	0.0050	mg/kg wet	0.05000		117	70-130			
1,2-Dichloropropane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
1,3,5-Trimethylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
1,3-Dichlorobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichloropropane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dioxane	0.885	0.100	mg/kg wet	1.000		89	70-130			
2,2-Dichloropropane	0.0594	0.0050	mg/kg wet	0.05000		119	70-130			
2-Butanone	0.263	0.0100	mg/kg wet	0.2500		105	70-130			
2-Chlorotoluene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
2-Hexanone	0.201	0.0100	mg/kg wet	0.2500		80	70-130			
4-Chlorotoluene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
4-Isopropyltoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.226	0.0100	mg/kg wet	0.2500		90	70-130			
Acetone	0.265	0.0100	mg/kg wet	0.2500		106	70-130			
Benzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Bromobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Bromochloromethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Bromodichloromethane	0.0618	0.0050	mg/kg wet	0.05000		124	70-130			
Bromoform	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
Bromomethane	0.0535	0.0100	mg/kg wet	0.05000		107	70-130			
Carbon Disulfide	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
Carbon Tetrachloride	0.0606	0.0050	mg/kg wet	0.05000		121	70-130			
Chlorobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Chloroethane	0.0509	0.0100	mg/kg wet	0.05000		102	70-130			
Chloroform	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
Chloromethane	0.0528	0.0100	mg/kg wet	0.05000		106	70-130			
cis-1,2-Dichloroethene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
cis-1,3-Dichloropropene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
Dibromochloromethane	0.0477	0.0020	mg/kg wet	0.05000		95	70-130			
Dibromomethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Dichlorodifluoromethane	0.0517	0.0100	mg/kg wet	0.05000		103	70-130			
Diethyl Ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
Ethyl tertiary-butyl ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Ethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Hexachlorobutadiene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
Isopropylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Methyl tert-Butyl Ether	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Methylene Chloride	0.0538	0.0100	mg/kg wet	0.05000		108	70-130			
Naphthalene	0.0390	0.0050	mg/kg wet	0.05000		78	70-130			
n-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
sec-Butylbenzene	0.0393	0.0050	mg/kg wet	0.05000		79	70-130			
Styrene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
tert-Butylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Tertiary-amyl methyl ether	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrachloroethene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Tetrahydrofuran	0.0394	0.0050	mg/kg wet	0.05000		79	70-130			
Toluene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,2-Dichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Trichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Trichlorofluoromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130			
Vinyl Chloride	0.0555	0.0100	mg/kg wet	0.05000		111	70-130			
Xylene O	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Xylene P,M	0.0949	0.0100	mg/kg wet	0.1000		95	70-130			
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0612*		mg/kg wet	*0.05000*		*122*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0515*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0585*		mg/kg wet	*0.05000*		*117*	*70-130*			
Surrogate: Toluene-d8	*0.0479*		mg/kg wet	*0.05000*		*96*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	5	20	
1,1,1-Trichloroethane	0.0597	0.0050	mg/kg wet	0.05000		119	70-130	5	20	
1,1,2,2-Tetrachloroethane	0.0472	0.0020	mg/kg wet	0.05000		94	70-130	2	20	
1,1,2-Trichloroethane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	7	20	
1,1-Dichloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	4	20	
1,1-Dichloroethene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	3	20	
1,1-Dichloropropene	0.0557	0.0050	mg/kg wet	0.05000		111	70-130	0.3	20	
1,2,3-Trichlorobenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	6	20	
1,2,3-Trichloropropane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	5	20	
1,2,4-Trichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	9	20	
1,2,4-Trimethylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	3	20	
1,2-Dibromo-3-Chloropropane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	20	
1,2-Dibromoethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	7	20	
1,2-Dichlorobenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	2	20	
1,2-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	9	20	
1,2-Dichloropropane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	5	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
1,3,5-Trimethylbenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	4	20	
1,3-Dichlorobenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	5	20	
1,3-Dichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	4	20	
1,4-Dichlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	2	20	
1,4-Dioxane	0.881	0.100	mg/kg wet	1.000		88	70-130	0.5	20	
2,2-Dichloropropane	0.0595	0.0050	mg/kg wet	0.05000		119	70-130	0.1	20	
2-Butanone	0.257	0.0100	mg/kg wet	0.2500		103	70-130	2	20	
2-Chlorotoluene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	6	20	
2-Hexanone	0.223	0.0100	mg/kg wet	0.2500		89	70-130	10	20	
4-Chlorotoluene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	3	20	
4-Isopropyltoluene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
4-Methyl-2-Pentanone	0.219	0.0100	mg/kg wet	0.2500		88	70-130	3	20	
Acetone	0.311	0.0100	mg/kg wet	0.2500		125	70-130	16	20	
Benzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	4	20	
Bromobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	20	
Bromochloromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	20	
Bromodichloromethane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130	8	20	
Bromoform	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	4	20	
Bromomethane	0.0513	0.0100	mg/kg wet	0.05000		103	70-130	4	20	
Carbon Disulfide	0.0547	0.0050	mg/kg wet	0.05000		109	70-130	2	20	
Carbon Tetrachloride	0.0574	0.0050	mg/kg wet	0.05000		115	70-130	5	20	
Chlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	8	20	
Chloroethane	0.0517	0.0100	mg/kg wet	0.05000		103	70-130	1	20	
Chloroform	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	7	20	
Chloromethane	0.0543	0.0100	mg/kg wet	0.05000		109	70-130	3	20	
cis-1,2-Dichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	20	
cis-1,3-Dichloropropene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	3	20	
Dibromochloromethane	0.0489	0.0020	mg/kg wet	0.05000		98	70-130	3	20	
Dibromomethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	9	20	
Dichlorodifluoromethane	0.0510	0.0100	mg/kg wet	0.05000		102	70-130	1	20	
Diethyl Ether	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	0.6	20	
Di-isopropyl ether	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	2	20	
Ethyl tertiary-butyl ether	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
Ethylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	10	20	
Hexachlorobutadiene	0.0573	0.0050	mg/kg wet	0.05000		115	70-130	6	20	
Isopropylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	7	20	
Methyl tert-Butyl Ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
Methylene Chloride	0.0505	0.0100	mg/kg wet	0.05000		101	70-130	6	20	
Naphthalene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	9	20	
n-Butylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	6	20	
n-Propylbenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	6	20	
sec-Butylbenzene	0.0405	0.0050	mg/kg wet	0.05000		81	70-130	3	20	
Styrene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	9	20	
tert-Butylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	6	20	
Tertiary-amyl methyl ether	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	2	20	

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71319 - 5035										
Tetrachloroethene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	11	20	
Tetrahydrofuran	0.0402	0.0050	mg/kg wet	0.05000		80	70-130	2	20	
Toluene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	3	20	
trans-1,2-Dichloroethene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	2	20	
trans-1,3-Dichloropropene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	1	20	
Trichloroethene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	20	
Trichlorofluoromethane	0.0573	0.0050	mg/kg wet	0.05000		115	70-130	3	20	
Vinyl Chloride	0.0562	0.0100	mg/kg wet	0.05000		112	70-130	1	20	
Xylene O	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	7	20	
Xylene P,M	0.103	0.0100	mg/kg wet	0.1000		103	70-130	8	20	
Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0538*		mg/kg wet	*0.05000*		*108*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0531*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0526*		mg/kg wet	*0.05000*		*105*	*70-130*			
Surrogate: Toluene-d8	*0.0506*		mg/kg wet	*0.05000*		*101*	*70-130*			
Batch CL71434 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0529*		mg/kg wet	*0.05000*		*106*	*70-130*			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
Surrogate: 4-Bromofluorobenzene	*0.0480*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0522*		mg/kg wet	*0.05000*		*104*	*70-130*			
Surrogate: Toluene-d8	*0.0501*		mg/kg wet	*0.05000*		*100*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
1,1,1-Trichloroethane	0.0610	0.0050	mg/kg wet	0.05000		122	70-130			
1,1,2,2-Tetrachloroethane	0.0488	0.0020	mg/kg wet	0.05000		98	70-130			
1,1,2-Trichloroethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloroethane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
1,1-Dichloroethene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,1-Dichloropropene	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
1,2,3-Trichlorobenzene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
1,2,3-Trichloropropane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,2,4-Trichlorobenzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,2,4-Trimethylbenzene	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
1,2-Dibromo-3-Chloropropane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dibromoethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
1,2-Dichloroethane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,3,5-Trimethylbenzene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,3-Dichlorobenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,3-Dichloropropane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
1,4-Dioxane	0.905	0.100	mg/kg wet	1.000		91	70-130			
2,2-Dichloropropane	0.0595	0.0050	mg/kg wet	0.05000		119	70-130			
2-Butanone	0.250	0.0100	mg/kg wet	0.2500		100	70-130			
2-Chlorotoluene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
2-Hexanone	0.205	0.0100	mg/kg wet	0.2500		82	70-130			
4-Chlorotoluene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
4-Isopropyltoluene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
4-Methyl-2-Pentanone	0.214	0.0100	mg/kg wet	0.2500		85	70-130			
Acetone	0.249	0.0100	mg/kg wet	0.2500		100	70-130			
Benzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Bromobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromochloromethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Bromodichloromethane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130			
Bromoform	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			
Bromomethane	0.0536	0.0100	mg/kg wet	0.05000		107	70-130			
Carbon Disulfide	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Carbon Tetrachloride	0.0584	0.0050	mg/kg wet	0.05000		117	70-130			
Chlorobenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Chloroethane	0.0530	0.0100	mg/kg wet	0.05000		106	70-130			
Chloroform	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
Chloromethane	0.0554	0.0100	mg/kg wet	0.05000		111	70-130			
cis-1,2-Dichloroethene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
cis-1,3-Dichloropropene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Dibromochloromethane	0.0492	0.0020	mg/kg wet	0.05000		98	70-130			
Dibromomethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Dichlorodifluoromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130			
Diethyl Ether	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Di-isopropyl ether	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Ethylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0586	0.0050	mg/kg wet	0.05000		117	70-130			
Isopropylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Methyl tert-Butyl Ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Methylene Chloride	0.0526	0.0100	mg/kg wet	0.05000		105	70-130			
Naphthalene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
n-Butylbenzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
n-Propylbenzene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
sec-Butylbenzene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
Styrene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
tert-Butylbenzene	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
Tertiary-amyl methyl ether	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Tetrachloroethene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Tetrahydrofuran	0.0404	0.0050	mg/kg wet	0.05000		81	70-130			
Toluene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
trans-1,2-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
trans-1,3-Dichloropropene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Trichloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Trichlorofluoromethane	0.0578	0.0050	mg/kg wet	0.05000		116	70-130			
Vinyl Chloride	0.0569	0.0100	mg/kg wet	0.05000		114	70-130			
Xylene O	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.157	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0531*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0504*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0530*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: Toluene-d8	*0.0490*		mg/kg wet	*0.05000*		*98*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	20	
1,1,1-Trichloroethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	7	20	
1,1,2,2-Tetrachloroethane	0.0483	0.0020	mg/kg wet	0.05000		97	70-130	1	20	
1,1,2-Trichloroethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	3	20	
1,1-Dichloroethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	6	20	
1,1-Dichloroethene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	6	20	
1,1-Dichloropropene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	6	20	
1,2,3-Trichlorobenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	0.9	20	

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
1,2,3-Trichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	0.4	20	
1,2,4-Trichlorobenzene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	1	20	
1,2,4-Trimethylbenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	4	20	
1,2-Dibromo-3-Chloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	3	20	
1,2-Dibromoethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	5	20	
1,2-Dichlorobenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
1,2-Dichloroethane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	4	20	
1,2-Dichloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	3	20	
1,3,5-Trimethylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	5	20	
1,3-Dichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	1	20	
1,3-Dichloropropane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	4	20	
1,4-Dichlorobenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	6	20	
1,4-Dioxane	0.939	0.100	mg/kg wet	1.000		94	70-130	4	20	
2,2-Dichloropropane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	6	20	
2-Butanone	0.247	0.0100	mg/kg wet	0.2500		99	70-130	1	20	
2-Chlorotoluene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	5	20	
2-Hexanone	0.204	0.0100	mg/kg wet	0.2500		82	70-130	0.6	20	
4-Chlorotoluene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	3	20	
4-Isopropyltoluene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	5	20	
4-Methyl-2-Pentanone	0.218	0.0100	mg/kg wet	0.2500		87	70-130	2	20	
Acetone	0.246	0.0100	mg/kg wet	0.2500		98	70-130	1	20	
Benzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	20	
Bromobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	3	20	
Bromochloromethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	4	20	
Bromodichloromethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	5	20	
Bromoform	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	3	20	
Bromomethane	0.0500	0.0100	mg/kg wet	0.05000		100	70-130	7	20	
Carbon Disulfide	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	6	20	
Carbon Tetrachloride	0.0547	0.0050	mg/kg wet	0.05000		109	70-130	7	20	
Chlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	6	20	
Chloroethane	0.0500	0.0100	mg/kg wet	0.05000		100	70-130	6	20	
Chloroform	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	5	20	
Chloromethane	0.0536	0.0100	mg/kg wet	0.05000		107	70-130	3	20	
cis-1,2-Dichloroethene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	5	20	
cis-1,3-Dichloropropene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	3	20	
Dibromochloromethane	0.0480	0.0020	mg/kg wet	0.05000		96	70-130	3	20	
Dibromomethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	20	
Dichlorodifluoromethane	0.0504	0.0100	mg/kg wet	0.05000		101	70-130	7	20	
Diethyl Ether	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
Di-isopropyl ether	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	3	20	
Ethyl tertiary-butyl ether	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
Ethylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	6	20	
Hexachlorobutadiene	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	4	20	
Isopropylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	20	
Methyl tert-Butyl Ether	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	0.8	20	

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71434 - 5035										
Methylene Chloride	0.0502	0.0100	mg/kg wet	0.05000		100	70-130	5	20	
Naphthalene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	1	20	
n-Butylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	4	20	
n-Propylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	5	20	
sec-Butylbenzene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130	4	20	
Styrene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	5	20	
tert-Butylbenzene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	5	20	
Tertiary-amyl methyl ether	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	0.6	20	
Tetrachloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	7	20	
Tetrahydrofuran	0.0421	0.0050	mg/kg wet	0.05000		84	70-130	4	20	
Toluene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	5	20	
trans-1,2-Dichloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	4	20	
trans-1,3-Dichloropropene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	2	20	
Trichloroethene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	5	20	
Trichlorofluoromethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	7	20	
Vinyl Chloride	0.0533	0.0100	mg/kg wet	0.05000		107	70-130	6	20	
Xylene O	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	7	20	
Xylene P,M	0.0975	0.0100	mg/kg wet	0.1000		97	70-130	6	20	
Xylenes (Total)	0.147	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0545*		mg/kg wet	*0.05000*		*109*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0501*		mg/kg wet	*0.05000*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0529*		mg/kg wet	*0.05000*		*106*	*70-130*			
Surrogate: Toluene-d8	*0.0483*		mg/kg wet	*0.05000*		*97*	*70-130*			
8081B Organochlorine Pesticides										
Batch CL71208 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
Chlordane (Total)	ND	0.0200	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0200	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71208 - 3546										
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0112*		mg/kg wet	*0.01250*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0118*		mg/kg wet	*0.01250*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00905*		mg/kg wet	*0.01250*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0101*		mg/kg wet	*0.01250*		*81*	*30-150*			
LCS										
4,4´-DDD	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
4,4´-DDD [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
4,4´-DDE	0.0093	0.0025	mg/kg wet	0.01250		75	40-140			
4,4´-DDE [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140			
4,4´-DDT	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
4,4´-DDT [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
Aldrin	0.0083	0.0025	mg/kg wet	0.01250		67	40-140			
Aldrin [2C]	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
alpha-BHC	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
alpha-BHC [2C]	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
alpha-Chlordane	0.0089	0.0025	mg/kg wet	0.01250		71	40-140			
alpha-Chlordane [2C]	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
beta-BHC	0.0086	0.0025	mg/kg wet	0.01250		69	40-140			
beta-BHC [2C]	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
delta-BHC	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71208 - 3546										
delta-BHC [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Dieldrin	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
Dieldrin [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Endosulfan I	0.0092	0.0025	mg/kg wet	0.01250		74	40-140			
Endosulfan I [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
Endosulfan II	0.0086	0.0025	mg/kg wet	0.01250		68	40-140			
Endosulfan II [2C]	0.0092	0.0025	mg/kg wet	0.01250		74	40-140			
Endosulfan Sulfate	0.0087	0.0025	mg/kg wet	0.01250		69	40-140			
Endosulfan Sulfate [2C]	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
Endrin	0.0093	0.0025	mg/kg wet	0.01250		74	40-140			
Endrin [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
Endrin Ketone	0.0091	0.0025	mg/kg wet	0.01250		73	40-140			
Endrin Ketone [2C]	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
gamma-BHC (Lindane)	0.0089	0.0015	mg/kg wet	0.01250		71	40-140			
gamma-BHC (Lindane) [2C]	0.0100	0.0015	mg/kg wet	0.01250		80	40-140			
gamma-Chlordane	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
gamma-Chlordane [2C]	0.0098	0.0025	mg/kg wet	0.01250		78	40-140			
Heptachlor	0.0080	0.0025	mg/kg wet	0.01250		64	40-140			
Heptachlor [2C]	0.0078	0.0025	mg/kg wet	0.01250		62	40-140			
Heptachlor Epoxide	0.0094	0.0025	mg/kg wet	0.01250		75	40-140			
Heptachlor Epoxide [2C]	0.0102	0.0025	mg/kg wet	0.01250		81	40-140			
Hexachlorobenzene	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Hexachlorobenzene [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
Methoxychlor	0.0084	0.0025	mg/kg wet	0.01250		67	40-140			
Methoxychlor [2C]	0.0083	0.0025	mg/kg wet	0.01250		66	40-140			
Surrogate: Decachlorobiphenyl	*0.0121*		mg/kg wet	*0.01250*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0128*		mg/kg wet	*0.01250*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00967*		mg/kg wet	*0.01250*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0105*		mg/kg wet	*0.01250*		*84*	*30-150*			
LCS Dup										
4,4´-DDD	0.0098	0.0025	mg/kg wet	0.01250		79	40-140	6	30	
4,4´-DDD [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	9	30	
4,4´-DDE	0.0099	0.0025	mg/kg wet	0.01250		79	40-140	5	30	
4,4´-DDE [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	8	30	
4,4´-DDT	0.0098	0.0025	mg/kg wet	0.01250		78	40-140	3	30	
4,4´-DDT [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	7	30	
Aldrin	0.0089	0.0025	mg/kg wet	0.01250		71	40-140	7	30	
Aldrin [2C]	0.0101	0.0025	mg/kg wet	0.01250		81	40-140	9	30	
alpha-BHC	0.0097	0.0025	mg/kg wet	0.01250		78	40-140	8	30	
alpha-BHC [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	10	30	
alpha-Chlordane	0.0095	0.0025	mg/kg wet	0.01250		76	40-140	6	30	
alpha-Chlordane [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	9	30	
beta-BHC	0.0092	0.0025	mg/kg wet	0.01250		73	40-140	7	30	
beta-BHC [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	8	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71208 - 3546										
delta-BHC	0.0101	0.0025	mg/kg wet	0.01250		81	40-140	8	30	
delta-BHC [2C]	0.0114	0.0025	mg/kg wet	0.01250		92	40-140	9	30	
Dieldrin	0.0102	0.0025	mg/kg wet	0.01250		82	40-140	6	30	
Dieldrin [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	8	30	
Endosulfan I	0.0097	0.0025	mg/kg wet	0.01250		78	40-140	6	30	
Endosulfan I [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	9	30	
Endosulfan II	0.0091	0.0025	mg/kg wet	0.01250		72	40-140	6	30	
Endosulfan II [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140	9	30	
Endosulfan Sulfate	0.0092	0.0025	mg/kg wet	0.01250		74	40-140	6	30	
Endosulfan Sulfate [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140	9	30	
Endrin	0.0098	0.0025	mg/kg wet	0.01250		78	40-140	5	30	
Endrin [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	8	30	
Endrin Ketone	0.0098	0.0025	mg/kg wet	0.01250		79	40-140	7	30	
Endrin Ketone [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	9	30	
gamma-BHC (Lindane)	0.0097	0.0015	mg/kg wet	0.01250		78	40-140	9	30	
gamma-BHC (Lindane) [2C]	0.0110	0.0015	mg/kg wet	0.01250		88	40-140	10	30	
gamma-Chlordane	0.0095	0.0025	mg/kg wet	0.01250		76	40-140	6	30	
gamma-Chlordane [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	9	30	
Heptachlor	0.0083	0.0025	mg/kg wet	0.01250		66	40-140	4	30	
Heptachlor [2C]	0.0081	0.0025	mg/kg wet	0.01250		65	40-140	4	30	
Heptachlor Epoxide	0.0101	0.0025	mg/kg wet	0.01250		80	40-140	7	30	
Heptachlor Epoxide [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	9	30	
Hexachlorobenzene	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	7	30	
Hexachlorobenzene [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140	9	30	
Methoxychlor	0.0087	0.0025	mg/kg wet	0.01250		69	40-140	3	30	
Methoxychlor [2C]	0.0088	0.0025	mg/kg wet	0.01250		70	40-140	6	30	
Surrogate: Decachlorobiphenyl	*0.0126*		mg/kg wet	*0.01250*		*101*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0136*		mg/kg wet	*0.01250*		*108*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00999*		mg/kg wet	*0.01250*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0110*		mg/kg wet	*0.01250*		*88*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71114 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71114 - 3540C										
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0191*		mg/kg wet	*0.02500*		*76*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0206*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0165*		mg/kg wet	*0.02500*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0190*		mg/kg wet	*0.02500*		*76*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		94	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		99	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		101	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		92	40-140			
Surrogate: Decachlorobiphenyl	*0.0244*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0247*		mg/kg wet	*0.02500*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0222*		mg/kg wet	*0.02500*		*89*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		95	40-140	2	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		101	40-140	2	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		104	40-140	3	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		94	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0243*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0250*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0215*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
8151A Chlorinated Herbicides										
Batch CL71832 - 3546										
Blank										
2,4,5-T	ND	0.010	mg/kg wet							
2,4,5-T [2C]	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex)	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	0.010	mg/kg wet							
2,4-D	ND	0.047	mg/kg wet							
2,4-D [2C]	ND	0.047	mg/kg wet							
2,4-DB	ND	0.048	mg/kg wet							
2,4-DB [2C]	ND	0.048	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL71832 - 3546										
Dalapon	ND	0.046	mg/kg wet							
Dalapon [2C]	ND	0.046	mg/kg wet							
Dicamba	ND	0.009	mg/kg wet							
Dicamba [2C]	ND	0.009	mg/kg wet							
Dichlorprop	ND	0.047	mg/kg wet							
Dichlorprop [2C]	ND	0.047	mg/kg wet							
Dinoseb	ND	0.048	mg/kg wet							
Dinoseb [2C]	ND	0.048	mg/kg wet							
MCPA	ND	2.32	mg/kg wet							
MCPA [2C]	ND	2.32	mg/kg wet							
MCPP	ND	2.35	mg/kg wet							
MCPP [2C]	ND	2.35	mg/kg wet							
Surrogate: DCAA	*0.114*		mg/kg wet	*0.2000*		*57*	*30-150*			
Surrogate: DCAA [2C]	*0.122*		mg/kg wet	*0.2000*		*61*	*30-150*			
LCS										
2,4,5-T	0.011	0.010	mg/kg wet	0.01900		56	40-140			
2,4,5-T [2C]	0.012	0.010	mg/kg wet	0.01900		62	40-140			
2,4,5-TP (Silvex)	0.011	0.010	mg/kg wet	0.01900		60	40-140			
2,4,5-TP (Silvex) [2C]	0.012	0.010	mg/kg wet	0.01900		62	40-140			
2,4-D	0.098	0.047	mg/kg wet	0.1880		52	40-140			
2,4-D [2C]	0.111	0.047	mg/kg wet	0.1880		59	40-140			
2,4-DB	0.112	0.048	mg/kg wet	0.1900		59	40-140			
2,4-DB [2C]	0.110	0.048	mg/kg wet	0.1900		58	40-140			
Dalapon	0.210	0.046	mg/kg wet	0.4550		46	40-140			
Dalapon [2C]	0.268	0.046	mg/kg wet	0.4550		59	40-140			
Dicamba	0.011	0.009	mg/kg wet	0.01880		60	40-140			
Dicamba [2C]	0.014	0.009	mg/kg wet	0.01880		72	40-140			
Dichlorprop	0.130	0.047	mg/kg wet	0.1880		69	40-140			
Dichlorprop [2C]	0.123	0.047	mg/kg wet	0.1880		65	40-140			
Dinoseb	0.015	0.048	mg/kg wet	0.09500		16	10-100			
Dinoseb [2C]	0.017	0.048	mg/kg wet	0.09500		18	10-100			
MCPA	12.4	2.32	mg/kg wet	18.60		67	40-140			
MCPA [2C]	13.7	2.32	mg/kg wet	18.60		73	40-140			
MCPP	11.5	2.35	mg/kg wet	18.80		61	40-140			
MCPP [2C]	12.7	2.35	mg/kg wet	18.80		68	40-140			
Surrogate: DCAA	*0.138*		mg/kg wet	*0.2000*		*69*	*30-150*			
Surrogate: DCAA [2C]	*0.143*		mg/kg wet	*0.2000*		*71*	*30-150*			
LCS Dup										
2,4,5-T	0.012	0.010	mg/kg wet	0.01900		64	40-140	13	30	
2,4,5-T [2C]	0.013	0.010	mg/kg wet	0.01900		70	40-140	12	30	
2,4,5-TP (Silvex)	0.013	0.010	mg/kg wet	0.01900		66	40-140	10	30	
2,4,5-TP (Silvex) [2C]	0.012	0.010	mg/kg wet	0.01900		62	40-140	0	30	
2,4-D	0.111	0.047	mg/kg wet	0.1880		59	40-140	13	30	
2,4-D [2C]	0.122	0.047	mg/kg wet	0.1880		65	40-140	9	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL71832 - 3546										
2,4-DB	0.108	0.048	mg/kg wet	0.1900		57	40-140	4	30	
2,4-DB [2C]	0.102	0.048	mg/kg wet	0.1900		54	40-140	8	30	
Dalapon	0.244	0.046	mg/kg wet	0.4550		54	40-140	15	30	
Dalapon [2C]	0.315	0.046	mg/kg wet	0.4550		69	40-140	16	30	
Dicamba	0.013	0.009	mg/kg wet	0.01880		70	40-140	15	30	
Dicamba [2C]	0.015	0.009	mg/kg wet	0.01880		82	40-140	13	30	
Dichlorprop	0.149	0.047	mg/kg wet	0.1880		79	40-140	13	30	
Dichlorprop [2C]	0.139	0.047	mg/kg wet	0.1880		74	40-140	13	30	
Dinoseb	0.024	0.048	mg/kg wet	0.09500		26	10-100	46	30	
Dinoseb [2C]	0.019	0.048	mg/kg wet	0.09500		20	10-100	8	30	
MCPA	15.6	2.32	mg/kg wet	18.60		84	40-140	22	30	
MCPA [2C]	13.6	2.32	mg/kg wet	18.60		73	40-140	0.5	30	
MCPP	12.6	2.35	mg/kg wet	18.80		67	40-140	8	30	
MCPP [2C]	13.5	2.35	mg/kg wet	18.80		72	40-140	6	30	
Surrogate: DCAA	*0.141*		mg/kg wet	*0.2000*		*71*	*30-150*			
Surrogate: DCAA [2C]	*0.144*		mg/kg wet	*0.2000*		*72*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CL71211 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71211 - 3546										
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.40*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.53*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.64*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.52*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: 2-Fluorophenol	*3.34*		mg/kg wet	*5.000*		*67*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.47*		mg/kg wet	*3.333*		*74*	*30-130*			
Surrogate: Phenol-d6	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.03*		mg/kg wet	*3.333*		*91*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140			
1,2-Dichlorobenzene	2.47	0.333	mg/kg wet	3.333		74	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71211 - 3546										
1,3-Dichlorobenzene	2.47	0.333	mg/kg wet	3.333		74	40-140			
1,4-Dichlorobenzene	2.45	0.333	mg/kg wet	3.333		74	40-140			
2,4,5-Trichlorophenol	2.87	0.333	mg/kg wet	3.333		86	30-130			
2,4,6-Trichlorophenol	2.81	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dichlorophenol	2.85	0.333	mg/kg wet	3.333		86	30-130			
2,4-Dimethylphenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
2,4-Dinitrophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
2,4-Dinitrotoluene	2.99	0.333	mg/kg wet	3.333		90	40-140			
2,6-Dinitrotoluene	2.72	0.333	mg/kg wet	3.333		82	40-140			
2-Chloronaphthalene	2.25	0.333	mg/kg wet	3.333		68	40-140			
2-Chlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130			
2-Methylnaphthalene	2.63	0.333	mg/kg wet	3.333		79	40-140			
2-Methylphenol	2.53	0.333	mg/kg wet	3.333		76	30-130			
2-Nitrophenol	2.71	0.333	mg/kg wet	3.333		81	30-130			
3,3´-Dichlorobenzidine	2.47	0.667	mg/kg wet	3.333		74	40-140			
3+4-Methylphenol	5.12	0.667	mg/kg wet	6.667		77	30-130			
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140			
4-Chloroaniline	1.95	0.667	mg/kg wet	3.333		59	40-140			
4-Nitrophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
Acenaphthene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Acenaphthylene	2.48	0.333	mg/kg wet	3.333		74	40-140			
Acetophenone	2.35	0.667	mg/kg wet	3.333		70	40-140			
Aniline	1.50	1.67	mg/kg wet	3.333		45	40-140			
Anthracene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Azobenzene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Benzo(a)anthracene	2.67	0.333	mg/kg wet	3.333		80	40-140			
Benzo(a)pyrene	2.77	0.167	mg/kg wet	3.333		83	40-140			
Benzo(b)fluoranthene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Benzo(g,h,i)perylene	3.23	0.333	mg/kg wet	3.333		97	40-140			
Benzo(k)fluoranthene	2.86	0.333	mg/kg wet	3.333		86	40-140			
bis(2-Chloroethoxy)methane	2.39	0.333	mg/kg wet	3.333		72	40-140			
bis(2-Chloroethyl)ether	2.20	0.333	mg/kg wet	3.333		66	40-140			
bis(2-chloroisopropyl)Ether	2.27	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Ethylhexyl)phthalate	3.38	0.333	mg/kg wet	3.333		101	40-140			
Butylbenzylphthalate	3.17	0.333	mg/kg wet	3.333		95	40-140			
Chrysene	2.93	0.167	mg/kg wet	3.333		88	40-140			
Dibenzo(a,h)Anthracene	3.27	0.167	mg/kg wet	3.333		98	40-140			
Dibenzofuran	2.53	0.333	mg/kg wet	3.333		76	40-140			
Diethylphthalate	2.95	0.333	mg/kg wet	3.333		88	40-140			
Dimethylphthalate	2.79	0.333	mg/kg wet	3.333		84	40-140			
Di-n-butylphthalate	3.16	0.333	mg/kg wet	3.333		95	40-140			
Di-n-octylphthalate	3.38	0.333	mg/kg wet	3.333		102	40-140			
Fluoranthene	3.05	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.79	0.333	mg/kg wet	3.333		84	40-140			
Hexachlorobenzene	2.98	0.333	mg/kg wet	3.333		89	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71211 - 3546										
Hexachlorobutadiene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Hexachloroethane	2.39	0.333	mg/kg wet	3.333		72	40-140			
Indeno(1,2,3-cd)Pyrene	3.27	0.333	mg/kg wet	3.333		98	40-140			
Isophorone	2.18	0.333	mg/kg wet	3.333		66	40-140			
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Nitrobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140			
N-Nitrosodimethylamine	1.85	0.333	mg/kg wet	3.333		56	40-140			
Pentachlorophenol	3.02	1.67	mg/kg wet	3.333		91	30-130			
Phenanthrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Phenol	2.27	0.333	mg/kg wet	3.333		68	30-130			
Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.49*		mg/kg wet	*3.333*		*75*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.96*		mg/kg wet	*5.000*		*99*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.86*		mg/kg wet	*5.000*		*77*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.56*		mg/kg wet	*3.333*		*77*	*30-130*			
Surrogate: 2-Fluorophenol	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.60*		mg/kg wet	*3.333*		*78*	*30-130*			
Surrogate: Phenol-d6	*3.65*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.12*		mg/kg wet	*3.333*		*94*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.66	0.333	mg/kg wet	3.333		80	40-140	2	30	
1,2-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	5	30	
1,3-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	5	30	
1,4-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	4	30	
2,4,5-Trichlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130	1	30	
2,4,6-Trichlorophenol	2.87	0.333	mg/kg wet	3.333		86	30-130	2	30	
2,4-Dichlorophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	6	30	
2,4-Dimethylphenol	2.55	0.333	mg/kg wet	3.333		76	30-130	0.4	30	
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		80	30-130	3	30	
2,4-Dinitrotoluene	2.83	0.333	mg/kg wet	3.333		85	40-140	6	30	
2,6-Dinitrotoluene	2.63	0.333	mg/kg wet	3.333		79	40-140	3	30	
2-Chloronaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	1	30	
2-Chlorophenol	2.29	0.333	mg/kg wet	3.333		69	30-130	3	30	
2-Methylnaphthalene	2.50	0.333	mg/kg wet	3.333		75	40-140	5	30	
2-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130	1	30	
2-Nitrophenol	2.63	0.333	mg/kg wet	3.333		79	30-130	3	30	
3,3´-Dichlorobenzidine	2.44	0.667	mg/kg wet	3.333		73	40-140	0.9	30	
3+4-Methylphenol	4.82	0.667	mg/kg wet	6.667		72	30-130	6	30	
4-Bromophenyl-phenylether	2.91	0.333	mg/kg wet	3.333		87	40-140	0.6	30	
4-Chloroaniline	1.84	0.667	mg/kg wet	3.333		55	40-140	6	30	
4-Nitrophenol	2.39	1.67	mg/kg wet	3.333		72	30-130	5	30	
Acenaphthene	2.48	0.333	mg/kg wet	3.333		74	40-140	4	30	
Acenaphthylene	2.35	0.333	mg/kg wet	3.333		71	40-140	5	30	
Acetophenone	2.24	0.667	mg/kg wet	3.333		67	40-140	5	30	
Aniline	1.41	1.67	mg/kg wet	3.333		42	40-140	6	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71211 - 3546										
Anthracene	2.78	0.333	mg/kg wet	3.333		83	40-140	2	30	
Azobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	1	30	
Benzo(a)anthracene	2.64	0.333	mg/kg wet	3.333		79	40-140	1	30	
Benzo(a)pyrene	2.75	0.167	mg/kg wet	3.333		82	40-140	0.6	30	
Benzo(b)fluoranthene	2.58	0.333	mg/kg wet	3.333		78	40-140	0.6	30	
Benzo(g,h,i)perylene	3.24	0.333	mg/kg wet	3.333		97	40-140	0.3	30	
Benzo(k)fluoranthene	2.84	0.333	mg/kg wet	3.333		85	40-140	0.7	30	
bis(2-Chloroethoxy)methane	2.30	0.333	mg/kg wet	3.333		69	40-140	4	30	
bis(2-Chloroethyl)ether	2.14	0.333	mg/kg wet	3.333		64	40-140	3	30	
bis(2-chloroisopropyl)Ether	2.22	0.333	mg/kg wet	3.333		67	40-140	2	30	
bis(2-Ethylhexyl)phthalate	3.29	0.333	mg/kg wet	3.333		99	40-140	3	30	
Butylbenzylphthalate	2.97	0.333	mg/kg wet	3.333		89	40-140	7	30	
Chrysene	2.88	0.167	mg/kg wet	3.333		87	40-140	2	30	
Dibenzo(a,h)Anthracene	3.23	0.167	mg/kg wet	3.333		97	40-140	1	30	
Dibenzofuran	2.44	0.333	mg/kg wet	3.333		73	40-140	4	30	
Diethylphthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	5	30	
Dimethylphthalate	2.69	0.333	mg/kg wet	3.333		81	40-140	4	30	
Di-n-butylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	3	30	
Di-n-octylphthalate	3.20	0.333	mg/kg wet	3.333		96	40-140	6	30	
Fluoranthene	2.95	0.333	mg/kg wet	3.333		88	40-140	3	30	
Fluorene	2.72	0.333	mg/kg wet	3.333		82	40-140	3	30	
Hexachlorobenzene	3.01	0.333	mg/kg wet	3.333		90	40-140	1	30	
Hexachlorobutadiene	2.78	0.333	mg/kg wet	3.333		83	40-140	2	30	
Hexachloroethane	2.31	0.333	mg/kg wet	3.333		69	40-140	3	30	
Indeno(1,2,3-cd)Pyrene	3.22	0.333	mg/kg wet	3.333		97	40-140	1	30	
Isophorone	2.13	0.333	mg/kg wet	3.333		64	40-140	2	30	
Naphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	4	30	
Nitrobenzene	2.34	0.333	mg/kg wet	3.333		70	40-140	0.4	30	
N-Nitrosodimethylamine	1.74	0.333	mg/kg wet	3.333		52	40-140	6	30	
Pentachlorophenol	3.11	1.67	mg/kg wet	3.333		93	30-130	3	30	
Phenanthrene	2.70	0.333	mg/kg wet	3.333		81	40-140	2	30	
Phenol	2.16	0.333	mg/kg wet	3.333		65	30-130	5	30	
Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140	6	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.32*		mg/kg wet	*3.333*		*70*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.81*		mg/kg wet	*5.000*		*96*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.64*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.57*		mg/kg wet	*3.333*		*77*	*30-130*			
Surrogate: 2-Fluorophenol	*3.25*		mg/kg wet	*5.000*		*65*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.49*		mg/kg wet	*3.333*		*75*	*30-130*			
Surrogate: Phenol-d6	*3.38*		mg/kg wet	*5.000*		*68*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.96*		mg/kg wet	*3.333*		*89*	*30-130*			
Batch CL71216 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71216 - 3546										
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71216 - 3546										
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.44*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.54*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.73*		mg/kg wet	*5.000*		*75*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.62*		mg/kg wet	*3.333*		*78*	*30-130*			
Surrogate: 2-Fluorophenol	*3.41*		mg/kg wet	*5.000*		*68*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.50*		mg/kg wet	*3.333*		*75*	*30-130*			
Surrogate: Phenol-d6	*3.58*		mg/kg wet	*5.000*		*72*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.07*		mg/kg wet	*3.333*		*92*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.45	0.333	mg/kg wet	3.333		73	40-140			
1,2-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		67	40-140			
1,3-Dichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140			
1,4-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		67	40-140			
2,4,5-Trichlorophenol	2.82	0.333	mg/kg wet	3.333		85	30-130			
2,4,6-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		81	30-130			
2,4-Dichlorophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
2,4-Dimethylphenol	2.29	0.333	mg/kg wet	3.333		69	30-130			
2,4-Dinitrophenol	2.88	1.67	mg/kg wet	3.333		86	30-130			
2,4-Dinitrotoluene	2.96	0.333	mg/kg wet	3.333		89	40-140			
2,6-Dinitrotoluene	2.62	0.333	mg/kg wet	3.333		79	40-140			
2-Chloronaphthalene	2.12	0.333	mg/kg wet	3.333		63	40-140			
2-Chlorophenol	2.15	0.333	mg/kg wet	3.333		65	30-130			
2-Methylnaphthalene	2.33	0.333	mg/kg wet	3.333		70	40-140			
2-Methylphenol	2.53	0.333	mg/kg wet	3.333		76	30-130			
2-Nitrophenol	2.45	0.333	mg/kg wet	3.333		73	30-130			
3,3´-Dichlorobenzidine	2.42	0.667	mg/kg wet	3.333		73	40-140			
3+4-Methylphenol	4.62	0.667	mg/kg wet	6.667		69	30-130			
4-Bromophenyl-phenylether	2.70	0.333	mg/kg wet	3.333		81	40-140			
4-Chloroaniline	1.81	0.667	mg/kg wet	3.333		54	40-140			
4-Nitrophenol	2.56	1.67	mg/kg wet	3.333		77	30-130			
Acenaphthene	2.32	0.333	mg/kg wet	3.333		70	40-140			
Acenaphthylene	2.25	0.333	mg/kg wet	3.333		67	40-140			
Acetophenone	2.10	0.667	mg/kg wet	3.333		63	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71216 - 3546										
Aniline	1.38	1.67	mg/kg wet	3.333		42	40-140			
Anthracene	2.71	0.333	mg/kg wet	3.333		81	40-140			
Azobenzene	2.02	0.333	mg/kg wet	3.333		60	40-140			
Benzo(a)anthracene	2.59	0.333	mg/kg wet	3.333		78	40-140			
Benzo(a)pyrene	2.65	0.167	mg/kg wet	3.333		80	40-140			
Benzo(b)fluoranthene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Benzo(g,h,i)perylene	3.15	0.333	mg/kg wet	3.333		95	40-140			
Benzo(k)fluoranthene	2.80	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Chloroethoxy)methane	2.12	0.333	mg/kg wet	3.333		64	40-140			
bis(2-Chloroethyl)ether	1.97	0.333	mg/kg wet	3.333		59	40-140			
bis(2-chloroisopropyl)Ether	2.05	0.333	mg/kg wet	3.333		62	40-140			
bis(2-Ethylhexyl)phthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	2.97	0.333	mg/kg wet	3.333		89	40-140			
Chrysene	2.83	0.167	mg/kg wet	3.333		85	40-140			
Dibenzo(a,h)Anthracene	3.13	0.167	mg/kg wet	3.333		94	40-140			
Dibenzofuran	2.49	0.333	mg/kg wet	3.333		75	40-140			
Diethylphthalate	2.88	0.333	mg/kg wet	3.333		86	40-140			
Dimethylphthalate	2.64	0.333	mg/kg wet	3.333		79	40-140			
Di-n-butylphthalate	3.08	0.333	mg/kg wet	3.333		92	40-140			
Di-n-octylphthalate	3.17	0.333	mg/kg wet	3.333		95	40-140			
Fluoranthene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Fluorene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Hexachlorobenzene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Hexachlorobutadiene	2.56	0.333	mg/kg wet	3.333		77	40-140			
Hexachloroethane	2.15	0.333	mg/kg wet	3.333		65	40-140			
Indeno(1,2,3-cd)Pyrene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	1.93	0.333	mg/kg wet	3.333		58	40-140			
Naphthalene	2.26	0.333	mg/kg wet	3.333		68	40-140			
Nitrobenzene	2.12	0.333	mg/kg wet	3.333		63	40-140			
N-Nitrosodimethylamine	1.67	0.333	mg/kg wet	3.333		50	40-140			
Pentachlorophenol	3.06	1.67	mg/kg wet	3.333		92	30-130			
Phenanthrene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Phenol	2.08	0.333	mg/kg wet	3.333		62	30-130			
Pyrene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Pyridine	1.44	1.67	mg/kg wet	3.333		43	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.23*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.79*		mg/kg wet	*5.000*		*96*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.56*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.44*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2-Fluorophenol	*3.19*		mg/kg wet	*5.000*		*64*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.38*		mg/kg wet	*3.333*		*71*	*30-130*			
Surrogate: Phenol-d6	*3.37*		mg/kg wet	*5.000*		*67*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.12*		mg/kg wet	*3.333*		*94*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	5	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71216 - 3546										
1,2-Dichlorobenzene	2.07	0.333	mg/kg wet	3.333		62	40-140	7	30	
1,3-Dichlorobenzene	2.08	0.333	mg/kg wet	3.333		62	40-140	6	30	
1,4-Dichlorobenzene	2.07	0.333	mg/kg wet	3.333		62	40-140	7	30	
2,4,5-Trichlorophenol	2.77	0.333	mg/kg wet	3.333		83	30-130	2	30	
2,4,6-Trichlorophenol	2.66	0.333	mg/kg wet	3.333		80	30-130	2	30	
2,4-Dichlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130	10	30	
2,4-Dimethylphenol	2.09	0.333	mg/kg wet	3.333		63	30-130	9	30	
2,4-Dinitrophenol	2.98	1.67	mg/kg wet	3.333		89	30-130	3	30	
2,4-Dinitrotoluene	2.84	0.333	mg/kg wet	3.333		85	40-140	4	30	
2,6-Dinitrotoluene	2.57	0.333	mg/kg wet	3.333		77	40-140	2	30	
2-Chloronaphthalene	2.05	0.333	mg/kg wet	3.333		62	40-140	3	30	
2-Chlorophenol	1.97	0.333	mg/kg wet	3.333		59	30-130	9	30	
2-Methylnaphthalene	2.14	0.333	mg/kg wet	3.333		64	40-140	9	30	
2-Methylphenol	2.20	0.333	mg/kg wet	3.333		66	30-130	14	30	
2-Nitrophenol	2.29	0.333	mg/kg wet	3.333		69	30-130	7	30	
3,3´-Dichlorobenzidine	2.57	0.667	mg/kg wet	3.333		77	40-140	6	30	
3+4-Methylphenol	3.96	0.667	mg/kg wet	6.667		59	30-130	15	30	
4-Bromophenyl-phenylether	2.75	0.333	mg/kg wet	3.333		83	40-140	2	30	
4-Chloroaniline	1.72	0.667	mg/kg wet	3.333		52	40-140	5	30	
4-Nitrophenol	2.47	1.67	mg/kg wet	3.333		74	30-130	4	30	
Acenaphthene	2.29	0.333	mg/kg wet	3.333		69	40-140	2	30	
Acenaphthylene	2.19	0.333	mg/kg wet	3.333		66	40-140	3	30	
Acetophenone	1.89	0.667	mg/kg wet	3.333		57	40-140	11	30	
Aniline	1.38	1.67	mg/kg wet	3.333		41	40-140	0.1	30	
Anthracene	2.74	0.333	mg/kg wet	3.333		82	40-140	0.9	30	
Azobenzene	2.07	0.333	mg/kg wet	3.333		62	40-140	3	30	
Benzo(a)anthracene	2.56	0.333	mg/kg wet	3.333		77	40-140	1	30	
Benzo(a)pyrene	2.67	0.167	mg/kg wet	3.333		80	40-140	0.6	30	
Benzo(b)fluoranthene	2.53	0.333	mg/kg wet	3.333		76	40-140	2	30	
Benzo(g,h,i)perylene	3.17	0.333	mg/kg wet	3.333		95	40-140	0.6	30	
Benzo(k)fluoranthene	2.74	0.333	mg/kg wet	3.333		82	40-140	2	30	
bis(2-Chloroethoxy)methane	1.97	0.333	mg/kg wet	3.333		59	40-140	7	30	
bis(2-Chloroethyl)ether	1.83	0.333	mg/kg wet	3.333		55	40-140	8	30	
bis(2-chloroisopropyl)Ether	1.88	0.333	mg/kg wet	3.333		56	40-140	9	30	
bis(2-Ethylhexyl)phthalate	3.16	0.333	mg/kg wet	3.333		95	40-140	3	30	
Butylbenzylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140	4	30	
Chrysene	2.80	0.167	mg/kg wet	3.333		84	40-140	1	30	
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140	0.4	30	
Dibenzofuran	2.40	0.333	mg/kg wet	3.333		72	40-140	4	30	
Diethylphthalate	2.77	0.333	mg/kg wet	3.333		83	40-140	4	30	
Dimethylphthalate	2.59	0.333	mg/kg wet	3.333		78	40-140	2	30	
Di-n-butylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140	0.3	30	
Di-n-octylphthalate	3.12	0.333	mg/kg wet	3.333		94	40-140	2	30	
Fluoranthene	3.05	0.333	mg/kg wet	3.333		91	40-140	2	30	
Fluorene	2.64	0.333	mg/kg wet	3.333		79	40-140	2	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71216 - 3546										
Hexachlorobenzene	2.87	0.333	mg/kg wet	3.333		86	40-140	1	30	
Hexachlorobutadiene	2.46	0.333	mg/kg wet	3.333		74	40-140	4	30	
Hexachloroethane	2.02	0.333	mg/kg wet	3.333		61	40-140	6	30	
Indeno(1,2,3-cd)Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140	0.6	30	
Isophorone	1.83	0.333	mg/kg wet	3.333		55	40-140	5	30	
Naphthalene	2.15	0.333	mg/kg wet	3.333		65	40-140	5	30	
Nitrobenzene	2.05	0.333	mg/kg wet	3.333		62	40-140	3	30	
N-Nitrosodimethylamine	1.45	0.333	mg/kg wet	3.333		44	40-140	14	30	
Pentachlorophenol	2.99	1.67	mg/kg wet	3.333		90	30-130	2	30	
Phenanthrene	2.64	0.333	mg/kg wet	3.333		79	40-140	0.5	30	
Phenol	1.87	0.333	mg/kg wet	3.333		56	30-130	11	30	
Pyrene	2.61	0.333	mg/kg wet	3.333		78	40-140	6	30	
Pyridine	1.35	1.67	mg/kg wet	3.333		41	40-140	6	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.03*		mg/kg wet	*3.333*		*61*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.70*		mg/kg wet	*5.000*		*94*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.13*		mg/kg wet	*5.000*		*63*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.30*		mg/kg wet	*3.333*		*69*	*30-130*			
Surrogate: 2-Fluorophenol	*2.87*		mg/kg wet	*5.000*		*57*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.23*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: Phenol-d6	*2.90*		mg/kg wet	*5.000*		*58*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.82*		mg/kg wet	*3.333*		*85*	*30-130*			
Classical Chemistry										
Batch CL71545 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	100	mg/kg							
Total Organic Carbon (2)	ND	100	mg/kg							
Total Organic Carbon (Average)	ND	100	mg/kg dry wt							
LCS										
Total Organic Carbon (1)	9930	100	mg/kg	10000		99	80-120			
Total Organic Carbon (2)	9140	100	mg/kg	10000		91	80-120			
Total Organic Carbon (Average)	9530	100	mg/kg dry wt							
LCS Dup										
Total Organic Carbon (1)	10200	100	mg/kg	10000		102	80-120	3	200	
Total Organic Carbon (2)	9790	100	mg/kg	10000		98	80-120	7	200	
Total Organic Carbon (Average)	10000	100	mg/kg dry wt							
Reference										
Total Organic Carbon (Average)	1.40		mg/kg dry wt							

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Notes and Definitions

Z-09	ND
Z-08	See Attached
XH	Peaks found in the retention time window for MCPA, MCPP did not confirm by GC/MS.
U	Analyte included in the analysis, but not detected
RRF	Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration
Q	Calibration required quadratic regression (Q).
D	Diluted.
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
#	Modified result
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

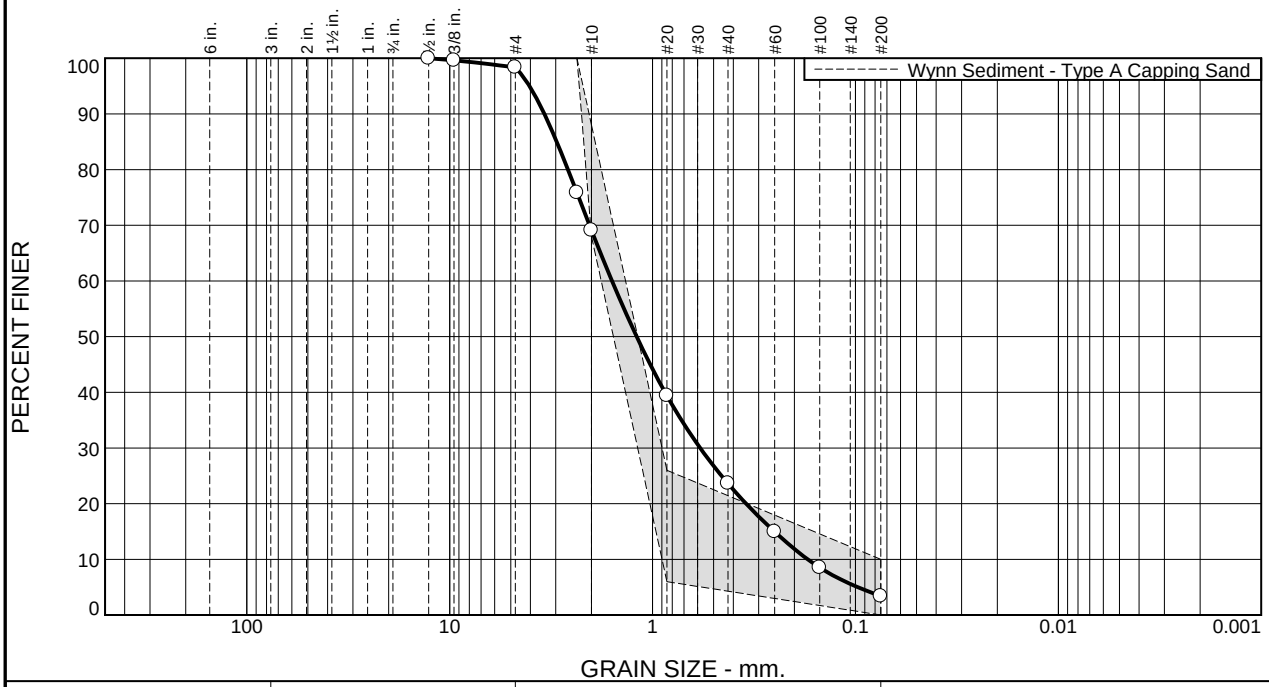
THIELSCH ENGINEERING	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 http://www.thielsch.com	Client Information: Charter Contracting Boston, MA PM: Marc Levesque Assigned By: Marc Levesque	Laboratory Information Project Name: **Wynn Boston Harbor Sediment Remediation** **Boston, MA** ESS Project Number: 1712199 Report Date: 12.12.17

LABORATORY TESTING DATA SHEET

Boring ID	ESS Sample No.	Depth (ft)	CTS Laboratory No.	Identification Tests							Density		Strength Tests				
				Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Setup as % of Proctor	CBR Dry unit wt. pcf	CBR Water Content %	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
Type A - Capping Sand - 020	1712199-01	Stock	17-S-1928	3.8			1.7	94.9	3.4								Greyish Brown well graded sand (SW)
Type A - Capping Sand - 021	1712199-02	Stock	17-S-1929	3.6			1.8	94.9	3.3								Greyish Brown well graded sand (SW)
Type A - Capping Sand - 022	1712199-03	Stock	17-S-1930	3.8			2.1	94.5	3.4								Greyish Brown well graded sand (SW)
Type A - Capping Sand - 023	1712199-04	Stock	17-S-1931	3.9			1.7	94.3	4.0								Greyish Brown well graded sand (SW)
Type A - Capping Sand - 024	1712199-05	Stock	17-S-1932	3.8			1.9	94.6	3.5								Greyish Brown well graded sand (SW)
Type C - Capping Sand - 014	1712199-06	Stock	17-S-1933	13.1			1.5	38.6	59.9								Gray sandy silt (ML)
Type C - Capping Sand - 015	1712199-07	Stock	17-S-1934	10.9			1.5	45.1	53.4								Gray sandy silt (ML)
Type C - Capping Sand - 016	1712199-08	Stock	17-S-1935	11.6			1.5	42.9	55.6								Gray sandy silt (ML)
Type C - Capping Sand - 017	1712199-09	Stock	17-S-1936	10.5			1.7	44.0	54.3								Gray sandy silt (ML)
Type C - Capping Sand - 018	1712199-10	Stock	17-S-1937	11.6			1.8	43.2	55.0								Gray sandy silt (ML)

Reviewed By _____ Date Revised: *12.13.17*

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.7	29.2	45.5	20.2	3.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.6		
#4	98.3		
#8	75.9	100.0	X
#10	69.1	68.0 - 88.0	
#20	39.4	6.0 - 26.0	X
#40	23.6		
#60	14.9		
#100	8.5		
#200	3.4	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4137 D_{85}= 2.9681 D_{60}= 1.5846
D_{50}= 1.1975 D_{30}= 0.5827 D_{15}= 0.2509
D_{10}= 0.1720 C_u= 9.21 C_c= 1.25

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

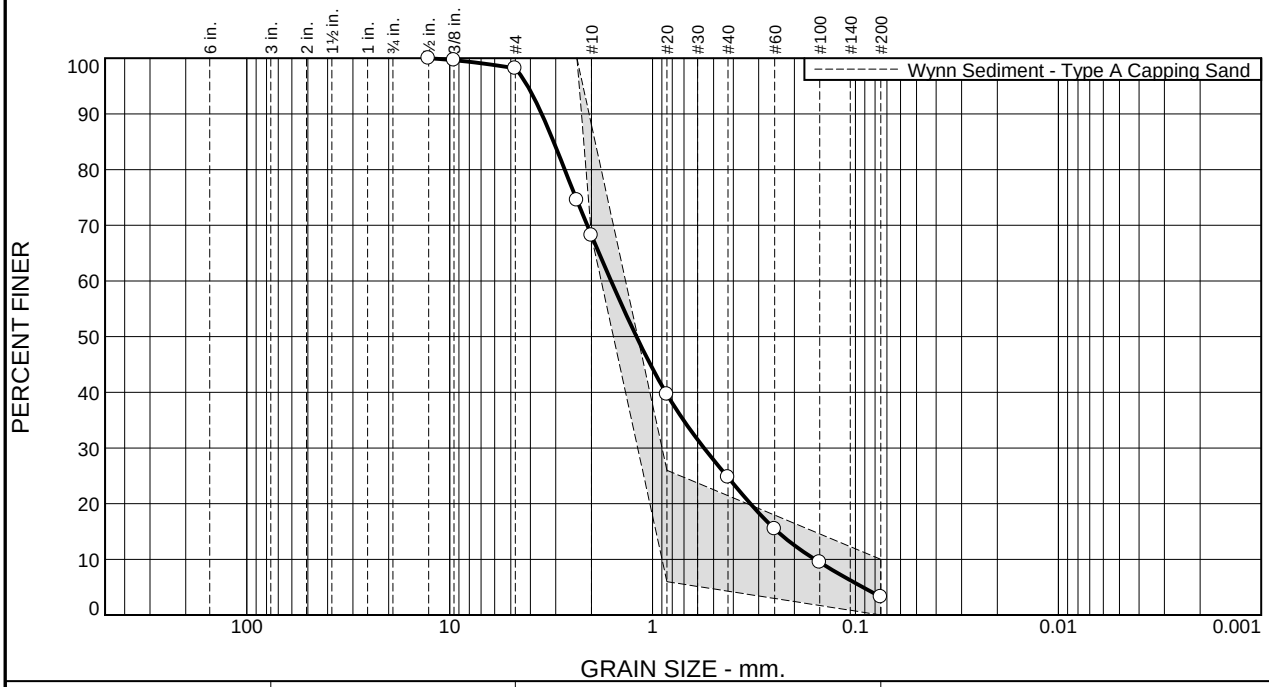
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 020

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.8	30.0	43.5	21.4	3.3	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.6		
#4	98.2		
#8	74.5	100.0	X
#10	68.2	68.0 - 88.0	
#20	39.7	6.0 - 26.0	X
#40	24.7		
#60	15.4		
#100	9.5		
#200	3.3	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.5173 D_{85}= 3.0738 D_{60}= 1.6013
D_{50}= 1.2002 D_{30}= 0.5578 D_{15}= 0.2424
D_{10}= 0.1584 C_u= 10.11 C_c= 1.23

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

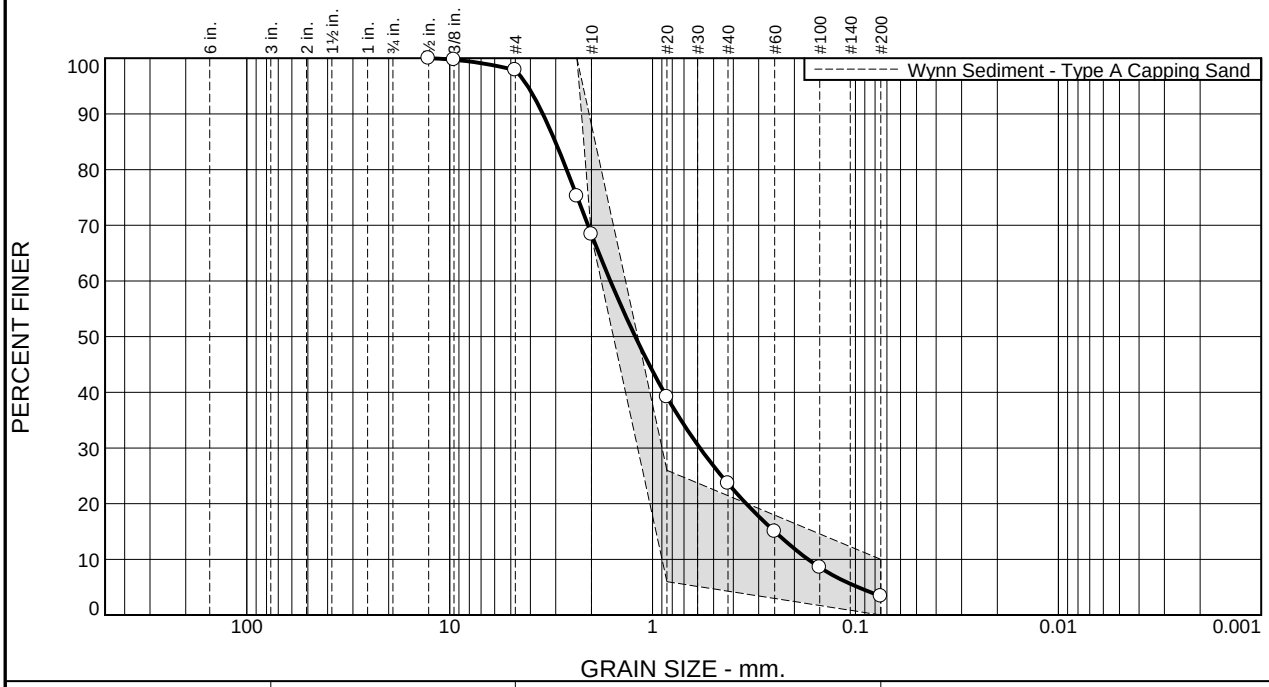
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 021

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-02

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	29.5	44.8	20.2	3.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.7		
#4	97.9		
#8	75.2	100.0	X
#10	68.4	68.0 - 88.0	
#20	39.2	6.0 - 26.0	X
#40	23.6		
#60	15.0		
#100	8.5		
#200	3.4	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4728 D_{85}= 3.0145 D_{60}= 1.6144
D_{50}= 1.2164 D_{30}= 0.5843 D_{15}= 0.2501
D_{10}= 0.1714 C_u= 9.42 C_c= 1.23

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

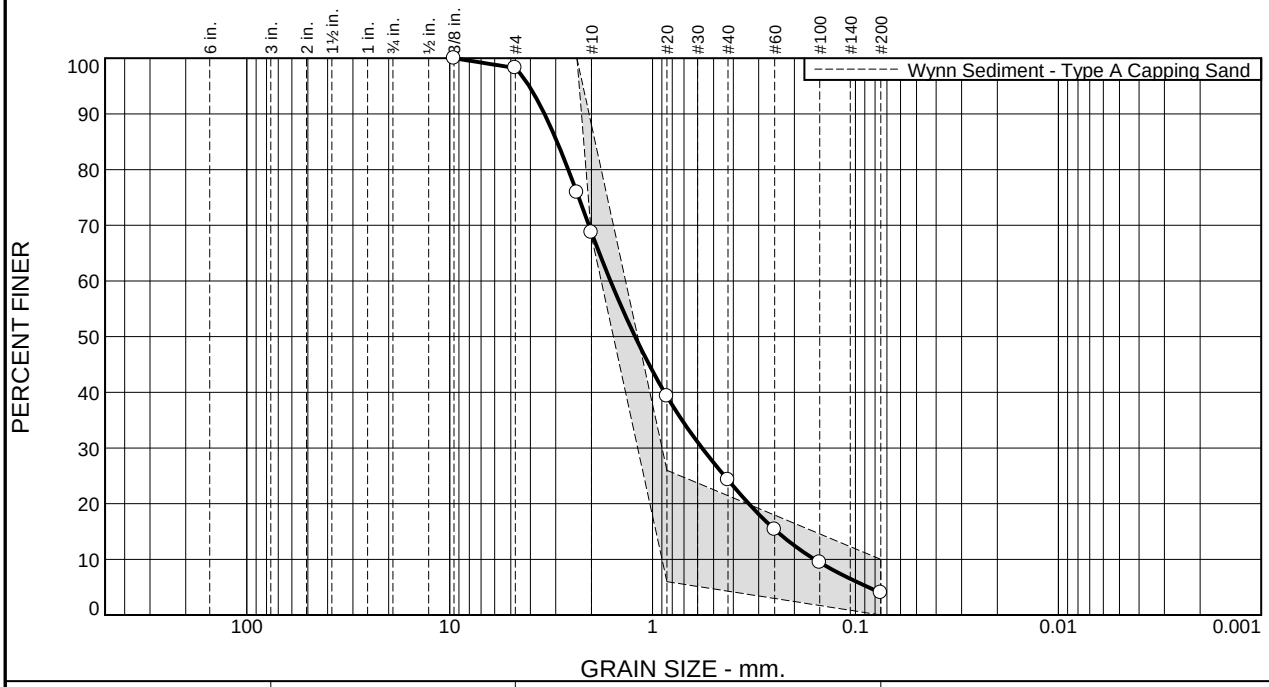
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 022

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-03

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.7	29.6	44.4	20.3	4.0	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.3		
#8	75.9	100.0	X
#10	68.7	68.0 - 88.0	
#20	39.3	6.0 - 26.0	X
#40	24.3		
#60	15.3		
#100	9.4		
#200	4.0	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4097 D_{85}= 2.9567 D_{60}= 1.6126
D_{50}= 1.2191 D_{30}= 0.5703 D_{15}= 0.2439
D_{10}= 0.1590 C_u= 10.14 C_c= 1.27

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

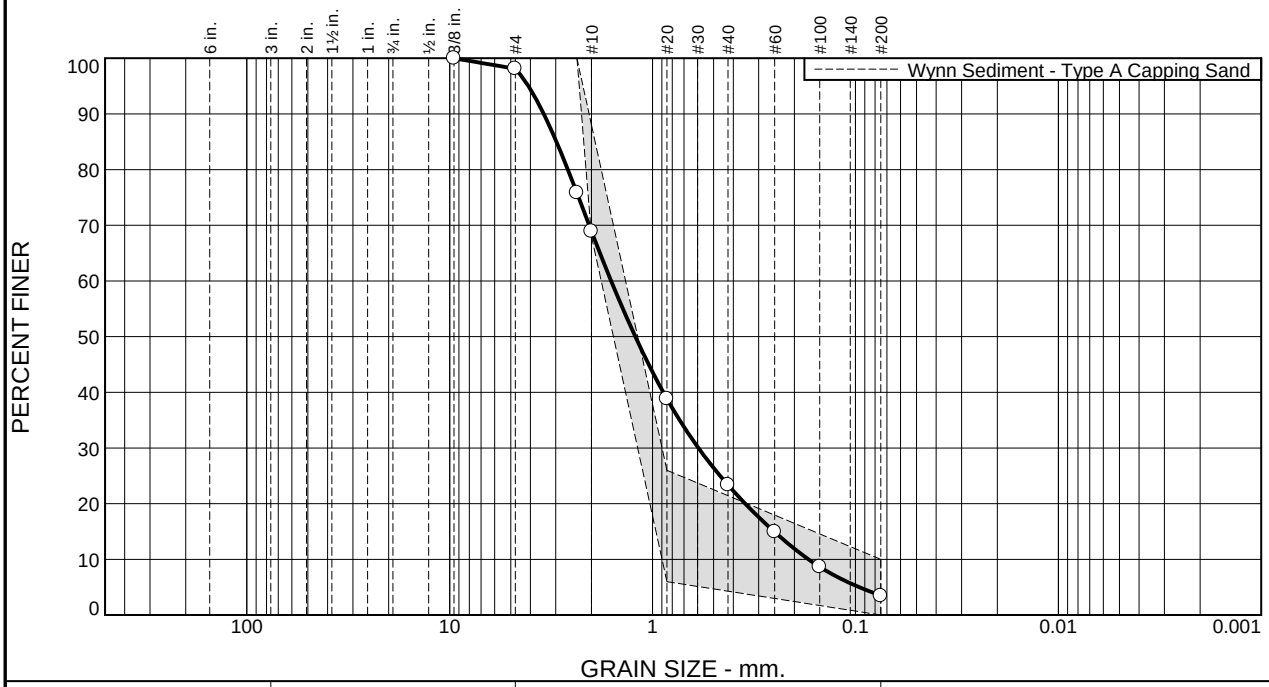
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 023

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-04

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	29.2	45.5	19.9	3.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.1		
#8	75.8	100.0	X
#10	68.9	68.0 - 88.0	
#20	38.8	6.0 - 26.0	X
#40	23.4		
#60	14.9		
#100	8.6		
#200	3.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4370 D_{85}= 2.9767 D_{60}= 1.6002
D_{50}= 1.2160 D_{30}= 0.5943 D_{15}= 0.2516
D_{10}= 0.1706 C_u= 9.38 C_c= 1.29

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

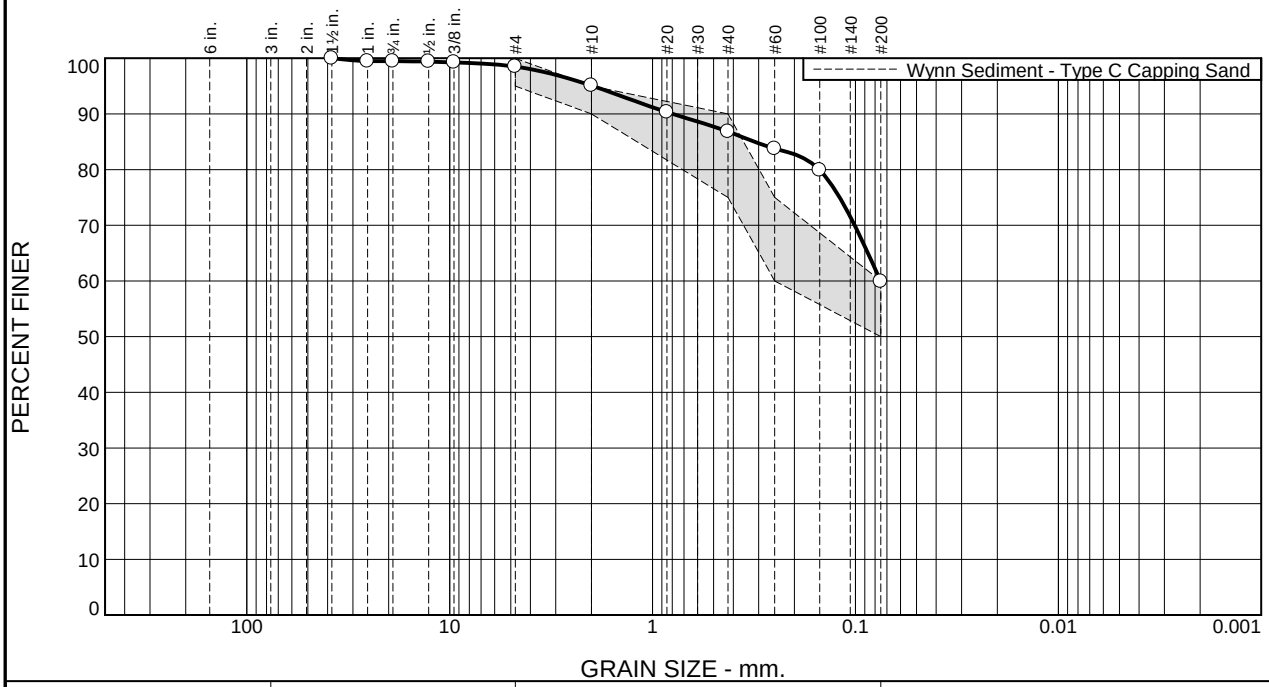
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 024

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-05

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.5	1.0	3.4	8.3	26.9	59.9	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5"	100.0		
1"	99.5		
0.75"	99.5		
0.5"	99.4		
0.375"	99.2		
#4	98.5	95.0 - 100.0	
#10	95.1	90.0 - 95.0	X
#20	90.3		
#40	86.8	75.0 - 90.0	
#60	83.8	60.0 - 75.0	X
#100	79.9		
#200	59.9	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 0.7969 D_{85}= 0.3145 D_{60}= 0.0752
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

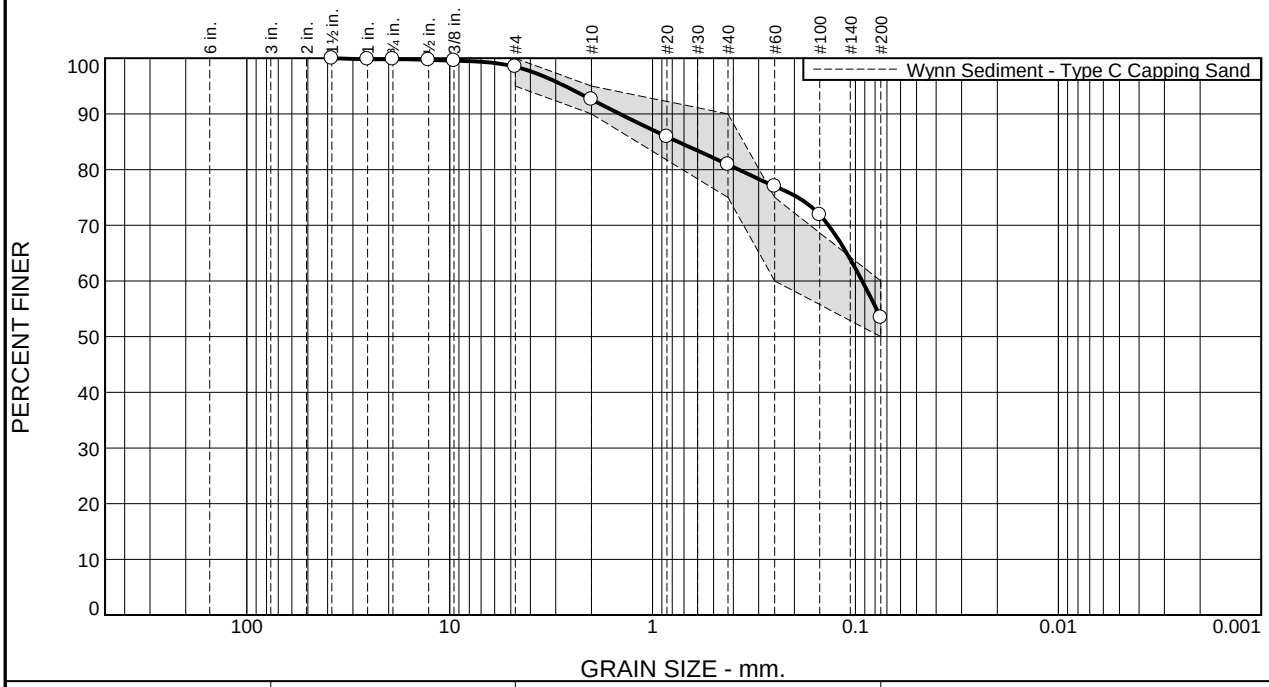
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 014

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-06

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.2	1.3	5.9	11.7	27.5	53.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5"	100.0		
1"	99.8		
0.75"	99.8		
0.5"	99.7		
0.375"	99.6		
#4	98.5	95.0 - 100.0	
#10	92.6	90.0 - 95.0	
#20	85.9		
#40	80.9	75.0 - 90.0	
#60	77.0	60.0 - 75.0	X
#100	71.9		
#200	53.4	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.4493 D_{85}= 0.7498 D_{60}= 0.0927
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

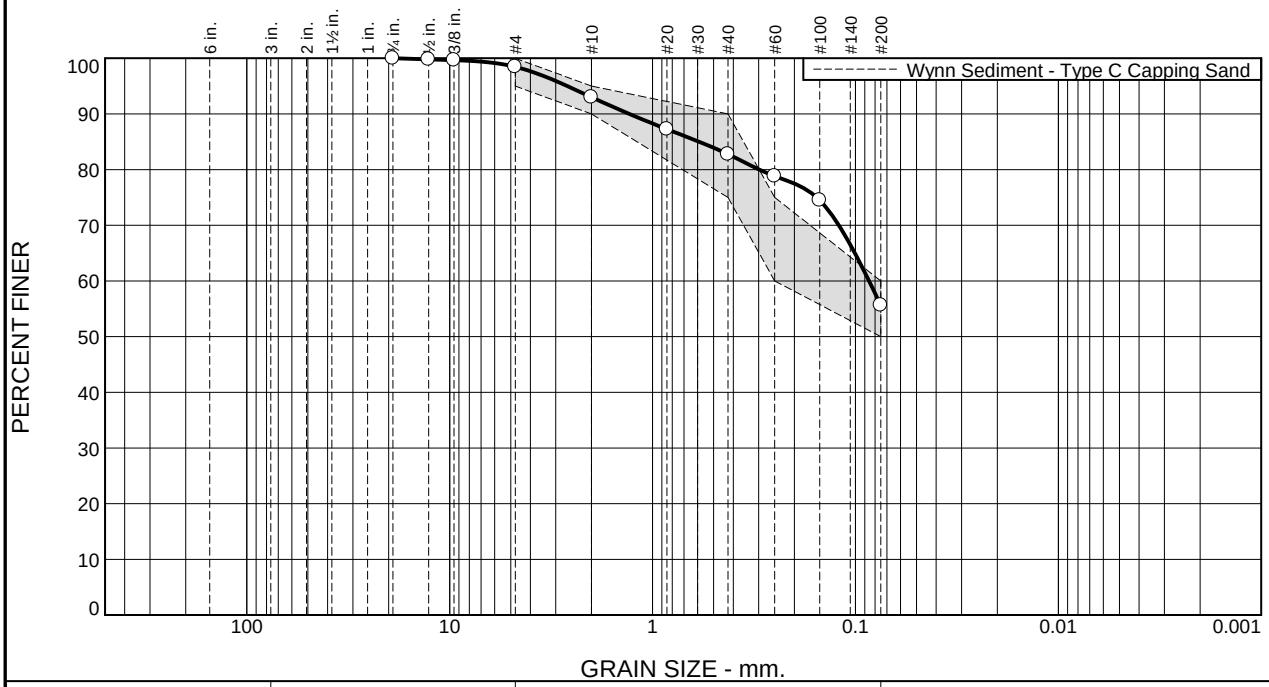
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 015

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-07

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	5.5	10.2	27.2	55.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.75"	100.0		
0.5"	99.8		
0.375"	99.6		
#4	98.5	95.0 - 100.0	
#10	93.0	90.0 - 95.0	
#20	87.3		
#40	82.8	75.0 - 90.0	
#60	78.8	60.0 - 75.0	X
#100	74.5		
#200	55.6	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.3013 D_{85}= 0.5896 D_{60}= 0.0857
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

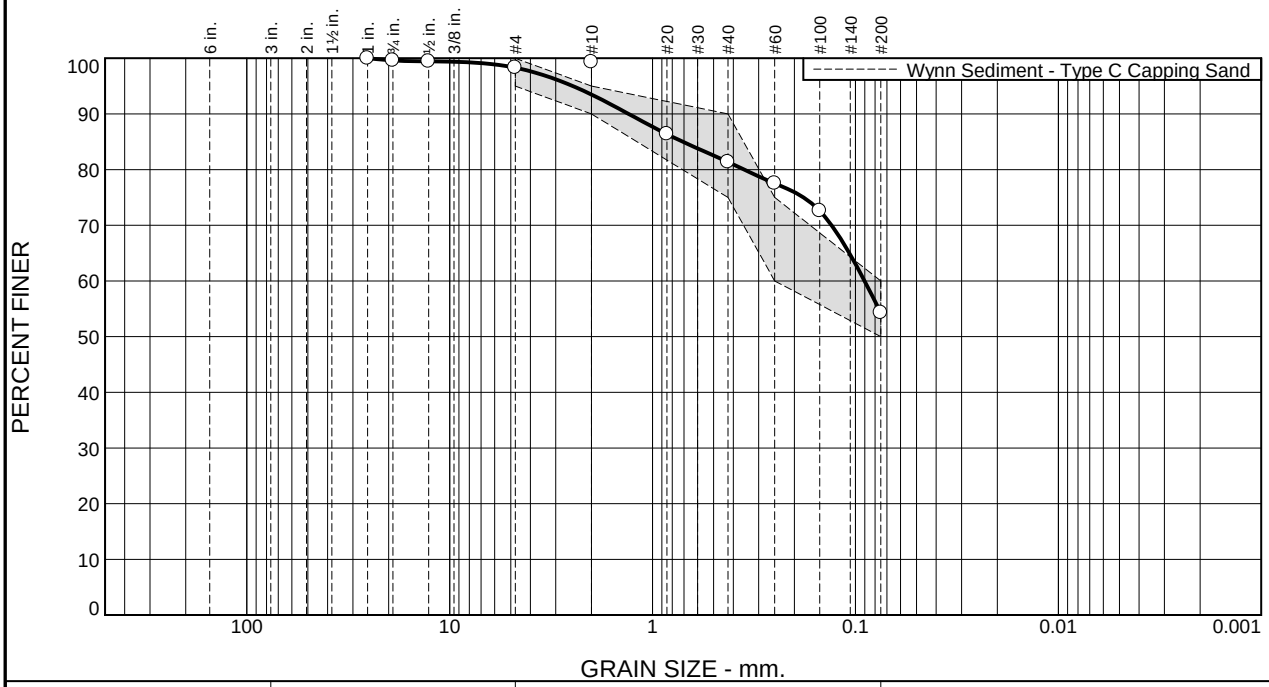
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 016

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-08

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.4	1.3	4.8	12.1	27.1	54.3	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1"	100.0		
0.75"	99.6		
0.5"	99.4		
#4	98.3	95.0 - 100.0	
#10	93.5	90.0 - 95.0	
#20	86.4		
#40	81.4	75.0 - 90.0	
#60	77.5	60.0 - 75.0	X
#100	72.6		
#200	54.3	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey silty sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.3125 D_{85}= 0.7094 D_{60}= 0.0902
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample contained one (1) large coarse gravel aggregate.

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

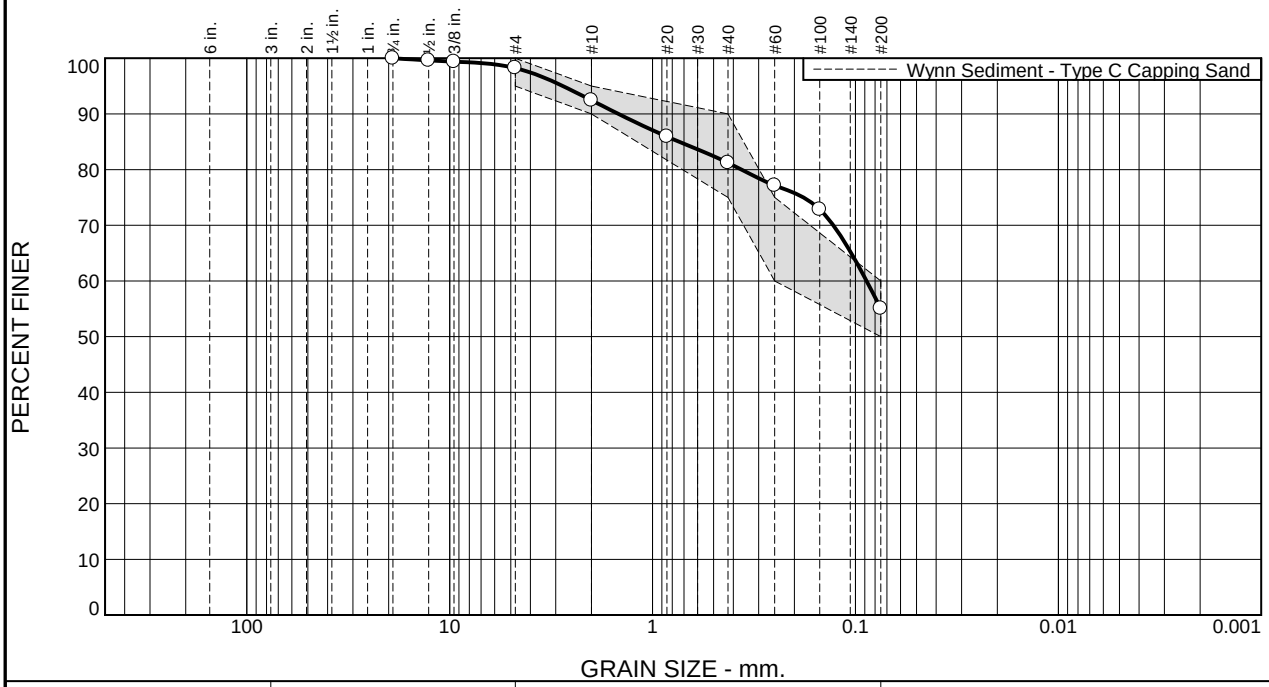
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 017

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-09

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.8	5.8	11.2	26.2	55.0	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.75"	100.0		
0.5"	99.6		
0.375"	99.4		
#4	98.2	95.0 - 100.0	
#10	92.4	90.0 - 95.0	
#20	85.9		
#40	81.2	75.0 - 90.0	
#60	77.2	60.0 - 75.0	X
#100	72.8		
#200	55.0	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.4730 D_{85}= 0.7397 D_{60}= 0.0882
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 018

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-10

SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
ESS Project No. 1712199
Project Manager Marc Levesque
Date Received 12/8/2017 (by)

Client Company Charter
Client Email
Site Location
Date Assigned 12/7/2017

Collected By
Date Required 12/13/2017

Sample Information				Lab No.	Identification Tests								Permeability		Compaction			Soil Strength			Consol.		Notes
Boring/ Test Pit No.	Sample or depth	Sample date	ESS Sample ID		Water Cont. %	LL & PL %	Org. %	Bulk	Sieve -200 %	Hyd -2μ %	G_s	Tube Den-sity	Sand	Clay	Mod.	Std.	CBR	Un-con-fined	UU	CIU	Stand ard	E.O.P.	
					D2216	D4318	D2974		D422		D854		D2434	D5084	D1557	D698	D1883	D2166	D2850	D4767	D2435	D2435	#
Type A - Capping Sand - 020		12/7/17	1712199-01		X				X														**
Type A - Capping Sand - 021		12/7/17	1712199-02		X				X														**
Type A - Capping Sand - 022		12/7/17	1712199-03		X				X														**
Type A - Capping Sand - 023		12/7/17	1712199-04		X				X														**
Type A - Capping Sand - 024		12/7/17	1712199-05		X				X														**
Type C - Capping Sand - 014		12/7/17	1712199-06		X				X														**
Type C - Capping Sand - 015		12/7/17	1712199-07		X				X														**
Type C - Capping Sand - 016		12/7/17	1712199-08		X				X														**
Type C - Capping Sand - 017		12/7/17	1712199-09		X				X														**
Type C - Capping Sand - 018		12/7/17	1712199-10		X				X														**

Notes: ** = D2487 Material Classification

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Prepared Date:

December 20, 2017

Report Information:

Pace Project #: 10414060
Sample Receipt Date: 12/12/2017
Client Project #: 1712199
Client Sub PO #: B02407
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:

Joanne Richardson

December 20, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

Report of Laboratory Analysis

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The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on ten samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 34-89%. Except for seven low values, which were flagged "R" on the results tables, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batch using clean reference matrix or sample matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 84-105% with relative percent differences of 0.7-15.0%. These results were within the target ranges for the method.

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

10414060

ESS Laboratory PACE

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1712199

Turn Time ___ Standard Other **DUE 12/20/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

MA-MCP Navy USACE CT DEP Other_____

Electonic Deliverables ***Excel** Access ***PDF**

Co. Name: **ESS Laboratory**	Project #:	Project Name: **1712199**	
Contact Person: **Shawn Morrell**	Proj. Location:		
Address: **ext 3083**	City , State:	Zip:	PO #: B02407
Tel.	email: smorrell@thielsch.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: Dioxin EPA 8290							
	12/7/17	1915	G	S	1712199-01	1	1	AG		X					001		
	12/7/17	1919	G	S	1712199-02	1	1	AG		X					002		
	12/7/17	1923	G	S	1712199-03	1	1	AG		X					003		
	12/7/17	1927	G	S	1712199-04	1	1	AG		X					004		
	12/7/17	1931	G	S	1712199-05	1	1	AG		X					005		
	12/7/17	1935	G	S	1712199-06	1	1	AG		X					006		
	12/7/17	1939	G	S	1712199-07	1	1	AG		X					007		
	12/7/17	1943	G	S	1712199-08	1	1	AG		X					008		
	12/7/17	1947	G	S	1712199-09	1	1	AG		X					009		
	12/7/17	1951	G	S	1712199-10	1	1	AG		X					010		

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA: X

Cooler Temperature: 4.0

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
	12/12/17 800 Tc 4.0		

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 30Aug2017 Page 1 of 2
	Document No.: **F-MN-L-213-rev.21**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: ESS Laboratory

Project #: WO#: 10414060

10414060

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 1Z037 497 1545 4356 77

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☑ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.9 **Cooler Temp Corrected (°C):** 4.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** ME 12/12/17

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☐ Yes	☑ No		3.
Sampler Name and/or Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☐ Yes	☑ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	☑ Yes	☐ No		12.
-Includes Date/Time/ID/Analysis Matrix: SL				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Joanne Richardson **Date:** 12-12-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-01			
Lab Sample ID	10414060001			
Filename	U171217A_04			
Injected By	BAL			
Total Amount Extracted	10.8 g	Matrix	Solid	
% Moisture	3.1	Dilution	NA	
Dry Weight Extracted	10.5 g	Collected	12/07/2017	19:15
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	06:12

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	51
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	48
				1,2,3,7,8-PeCDF-13C	2.00	49
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	50
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	50
				1,2,3,4,7,8-HxCDF-13C	2.00	60
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	67
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	48
				1,2,3,4,7,8-HxCDD-13C	2.00	55
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	61
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	55
				1,2,3,4,7,8,9-HpCDF-13C	2.00	41
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	51
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	34 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	52
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-02			
Lab Sample ID	10414060002			
Filename	U171217A_05			
Injected By	BAL			
Total Amount Extracted	11.0 g	Matrix	Solid	
% Moisture	3.2	Dilution	NA	
Dry Weight Extracted	10.6 g	Collected	12/07/2017	19:19
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	06:56

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	58
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	58
				1,2,3,7,8-PeCDF-13C	2.00	54
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	55
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	57
				1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	56
				1,2,3,4,7,8-HxCDD-13C	2.00	63
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	48
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	38 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	64
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-03			
Lab Sample ID	10414060003			
Filename	U171217A_06			
Injected By	BAL			
Total Amount Extracted	11.0 g	Matrix	Solid	
% Moisture	3.2	Dilution	NA	
Dry Weight Extracted	10.6 g	Collected	12/07/2017	19:23
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	07:39

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	55
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	56
				1,2,3,7,8-PeCDF-13C	2.00	53
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	54
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	55
				1,2,3,4,7,8-HxCDF-13C	2.00	64
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	72
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	54
				1,2,3,4,7,8-HxCDD-13C	2.00	61
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	67
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	58
				1,2,3,4,7,8,9-HpCDF-13C	2.00	47
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	58
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	37 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-04			
Lab Sample ID	10414060004			
Filename	U171217A_07			
Injected By	BAL			
Total Amount Extracted	10.8 g	Matrix	Solid	
% Moisture	3.4	Dilution	NA	
Dry Weight Extracted	10.4 g	Collected	12/07/2017	19:27
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	08:23

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	63
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	63
				1,2,3,7,8-PeCDF-13C	2.00	59
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	61
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	61
				1,2,3,4,7,8-HxCDF-13C	2.00	70
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	76
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	61
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	72
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	63
				1,2,3,4,7,8,9-HpCDF-13C	2.00	52
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	63
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	42
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	71
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-05			
Lab Sample ID	10414060005			
Filename	U171217A_08			
Injected By	BAL			
Total Amount Extracted	11.2 g	Matrix	Solid	
% Moisture	3.3	Dilution	NA	
Dry Weight Extracted	10.8 g	Collected	12/07/2017	19:31
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	09:06

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	58
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	59
				1,2,3,7,8-PeCDF-13C	2.00	58
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	59
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	60
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	67
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	68
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	58
				1,2,3,4,7,8-HxCDD-13C	2.00	58
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	65
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	54
				1,2,3,4,7,8,9-HpCDF-13C	2.00	48
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	56
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	40
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	62
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
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ND = Not Detected
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NC = Not Calculated

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-06		
Lab Sample ID	10414060006		
Filename	U171217A_09		
Injected By	BAL		
Total Amount Extracted	12.3 g	Matrix	Solid
% Moisture	11.4	Dilution	NA
Dry Weight Extracted	10.9 g	Collected	12/07/2017 19:35
ICAL ID	U171107	Received	12/12/2017 08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017 14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017 09:50

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	50
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	45
				1,2,3,7,8-PeCDF-13C	2.00	48
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	49
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	47
				1,2,3,4,7,8-HxCDF-13C	2.00	79
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	89
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	82
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	50
				1,2,3,4,7,8-HxCDD-13C	2.00	77
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	78
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	70
				1,2,3,4,7,8,9-HpCDF-13C	2.00	51
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	64
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	37 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	49
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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R = Recovery outside target range

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-07			
Lab Sample ID	10414060007			
Filename	U171217A_10			
Injected By	BAL			
Total Amount Extracted	12.1 g	Matrix	Solid	
% Moisture	10.7	Dilution	NA	
Dry Weight Extracted	10.8 g	Collected	12/07/2017	19:39
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	10:34

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	58
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	54
				1,2,3,7,8-PeCDF-13C	2.00	55
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	56
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	56
				1,2,3,4,7,8-HxCDF-13C	2.00	67
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	57
				1,2,3,4,7,8-HxCDD-13C	2.00	60
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	52
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	63
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	41
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	58
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-08			
Lab Sample ID	10414060008			
Filename	U171217A_11			
Injected By	BAL			
Total Amount Extracted	12.2 g	Matrix	Solid	
% Moisture	10.3	Dilution	NA	
Dry Weight Extracted	10.9 g	Collected	12/07/2017	19:43
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	11:18

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	54
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	54
				1,2,3,7,8-PeCDF-13C	2.00	59
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	61
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	62
				1,2,3,4,7,8-HxCDF-13C	2.00	72
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	80
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	61
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	74
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	64
				1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	64
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	43
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	58
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-09			
Lab Sample ID	10414060009			
Filename	U171217A_12			
Injected By	BAL			
Total Amount Extracted	12.0 g	Matrix	Solid	
% Moisture	9.6	Dilution	NA	
Dry Weight Extracted	10.8 g	Collected	12/07/2017	19:47
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	12:02

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	55
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	53
				1,2,3,7,8-PeCDF-13C	2.00	49
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	52
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	51
				1,2,3,4,7,8-HxCDF-13C	2.00	70
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	80
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	76
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	54
				1,2,3,4,7,8-HxCDD-13C	2.00	61
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	74
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	65
				1,2,3,4,7,8,9-HpCDF-13C	2.00	49
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	62
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	38 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	59
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712199-10			
Lab Sample ID	10414060010			
Filename	U171217A_13			
Injected By	BAL			
Total Amount Extracted	12.2 g	Matrix	Solid	
% Moisture	9.7	Dilution	NA	
Dry Weight Extracted	11.0 g	Collected	12/07/2017	19:51
ICAL ID	U171107	Received	12/12/2017	08:00
CCal Filename(s)	U171216B_19 & U171217A_17	Extracted	12/13/2017	14:50
Method Blank ID	BLANK-59101	Analyzed	12/17/2017	12:45

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	58
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	58
				1,2,3,7,8-PeCDF-13C	2.00	58
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	60
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	60
				1,2,3,4,7,8-HxCDF-13C	2.00	69
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	78
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	77
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	62
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	71
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	62
				1,2,3,4,7,8,9-HpCDF-13C	2.00	49
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	60
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	37 R
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	63
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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R = Recovery outside target range

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-59101	Matrix	Solid
Filename	U171216B_07	Dilution	NA
Total Amount Extracted	10.0 g	Extracted	12/13/2017 14:50
ICAL ID	U171107	Analyzed	12/16/2017 18:33
CCal Filename(s)	U171216B_03 & U171216B_19	Injected By	BAL

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	53
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	52
				1,2,3,7,8-PeCDF-13C	2.00	51
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	54
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	56
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	71
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	55
				1,2,3,4,7,8-HxCDD-13C	2.00	62
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	52
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	62
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	41
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-59102		
Filename	U171216B_06	Matrix	Solid
Total Amount Extracted	10.6 g	Dilution	NA
ICAL ID	U171107	Extracted	12/13/2017 14:50
CCal Filename(s)	U171216B_03 & U171216B_19	Analyzed	12/16/2017 17:49
Method Blank ID	BLANK-59101	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.18	91	2,3,7,8-TCDF-13C	2.0	59
Total TCDF				2,3,7,8-TCDD-13C	2.0	57
				1,2,3,7,8-PeCDF-13C	2.0	56
2,3,7,8-TCDD	0.20	0.19	93	2,3,4,7,8-PeCDF-13C	2.0	57
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	60
				1,2,3,4,7,8-HxCDF-13C	2.0	70
1,2,3,7,8-PeCDF	1.0	0.95	95	1,2,3,6,7,8-HxCDF-13C	2.0	79
2,3,4,7,8-PeCDF	1.0	0.86	86	2,3,4,6,7,8-HxCDF-13C	2.0	81
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	64
				1,2,3,4,7,8-HxCDD-13C	2.0	68
1,2,3,7,8-PeCDD	1.0	0.87	87	1,2,3,6,7,8-HxCDD-13C	2.0	73
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	66
				1,2,3,4,7,8,9-HpCDF-13C	2.0	54
1,2,3,4,7,8-HxCDF	1.0	0.94	94	1,2,3,4,6,7,8-HpCDD-13C	2.0	64
1,2,3,6,7,8-HxCDF	1.0	0.88	88	OCDD-13C	4.0	44
2,3,4,6,7,8-HxCDF	1.0	0.84	84			
1,2,3,7,8,9-HxCDF	1.0	0.85	85	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	1.0	100	2,3,7,8-TCDD-37Cl4	0.20	59
1,2,3,6,7,8-HxCDD	1.0	0.98	98			
1,2,3,7,8,9-HxCDD	1.0	0.95	95			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.94	94			
1,2,3,4,7,8,9-HpCDF	1.0	0.93	93			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.85	85			
Total HpCDD						
OCDF	2.0	2.0	100			
OCDD	2.0	1.9	94			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

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Method 8290 Spiked Sample Report

Client - ESS Laboratory

Client's Sample ID	1712199-01		
Lab Sample ID	10414060001-MS		
Filename	U171217A_01	Matrix	Solid
Total Amount Extracted	10.8 g	Dilution	NA
ICAL ID	U171107	Extracted	12/13/2017 14:50
CCal Filename(s)	U171216B_19 & U171217A_17	Analyzed	12/17/2017 04:01
Method Blank ID	BLANK-59101	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.19	95	2,3,7,8-TCDF-13C	2.00	61
				2,3,7,8-TCDD-13C	2.00	61
				1,2,3,7,8-PeCDF-13C	2.00	58
2,3,7,8-TCDD	0.20	0.20	99	2,3,4,7,8-PeCDF-13C	2.00	60
				1,2,3,7,8-PeCDD-13C	2.00	62
				1,2,3,4,7,8-HxCDF-13C	2.00	66
1,2,3,7,8-PeCDF	1.00	0.99	99	1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	1.00	0.86	86	2,3,4,6,7,8-HxCDF-13C	2.00	74
				1,2,3,7,8,9-HxCDF-13C	2.00	60
				1,2,3,4,7,8-HxCDD-13C	2.00	63
1,2,3,7,8-PeCDD	1.00	0.94	94	1,2,3,6,7,8-HxCDD-13C	2.00	70
				1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	50
1,2,3,4,7,8-HxCDF	1.00	0.97	97	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	1.00	0.90	90	OCDD-13C	4.00	40
2,3,4,6,7,8-HxCDF	1.00	0.85	85			
1,2,3,7,8,9-HxCDF	1.00	0.85	85	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	0.99	99	2,3,7,8-TCDD-37Cl4	0.20	66
1,2,3,6,7,8-HxCDD	1.00	0.96	96			
1,2,3,7,8,9-HxCDD	1.00	0.95	95			
1,2,3,4,6,7,8-HpCDF	1.00	0.96	96			
1,2,3,4,7,8,9-HpCDF	1.00	0.87	87			
1,2,3,4,6,7,8-HpCDD	1.00	0.85	85			
OCDF	2.00	1.96	98			
OCDD	2.00	1.99	99			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

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Method 8290 Spiked Sample Report

Client - ESS Laboratory

Client's Sample ID	1712199-01		
Lab Sample ID	10414060001-MSD		
Filename	U171217A_02	Matrix	Solid
Total Amount Extracted	10.7 g	Dilution	NA
ICAL ID	U171107	Extracted	12/13/2017 14:50
CCal Filename(s)	U171216B_19 & U171217A_17	Analyzed	12/17/2017 04:45
Method Blank ID	BLANK-59101	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.21	105	2,3,7,8-TCDF-13C	2.00	53
				2,3,7,8-TCDD-13C	2.00	53
				1,2,3,7,8-PeCDF-13C	2.00	52
2,3,7,8-TCDD	0.20	0.21	103	2,3,4,7,8-PeCDF-13C	2.00	54
				1,2,3,7,8-PeCDD-13C	2.00	56
				1,2,3,4,7,8-HxCDF-13C	2.00	62
1,2,3,7,8-PeCDF	1.00	1.04	104	1,2,3,6,7,8-HxCDF-13C	2.00	67
2,3,4,7,8-PeCDF	1.00	0.93	93	2,3,4,6,7,8-HxCDF-13C	2.00	67
				1,2,3,7,8,9-HxCDF-13C	2.00	52
				1,2,3,4,7,8-HxCDD-13C	2.00	55
1,2,3,7,8-PeCDD	1.00	0.92	92	1,2,3,6,7,8-HxCDD-13C	2.00	65
				1,2,3,4,6,7,8-HpCDF-13C	2.00	56
				1,2,3,4,7,8,9-HpCDF-13C	2.00	45
1,2,3,4,7,8-HxCDF	1.00	0.96	96	1,2,3,4,6,7,8-HpCDD-13C	2.00	55
1,2,3,6,7,8-HxCDF	1.00	0.95	95	OCDD-13C	4.00	36 R
2,3,4,6,7,8-HxCDF	1.00	0.88	88			
1,2,3,7,8,9-HxCDF	1.00	0.98	98	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.05	105	2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	1.00	0.99	99			
1,2,3,7,8,9-HxCDD	1.00	0.97	97			
1,2,3,4,6,7,8-HpCDF	1.00	0.97	97			
1,2,3,4,7,8,9-HpCDF	1.00	0.90	90			
1,2,3,4,6,7,8-HpCDD	1.00	0.89	89			
OCDF	2.00	2.01	101			
OCDD	2.00	1.93	96			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

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Minneapolis, MN 55414

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Method 8290 Spike Sample Results

Client - ESS Laboratory

Client Sample ID	1712199-01			Dry Weights	
Lab Sample ID	10414060001	Sample Filename	U171217A_04	Sample Amount	10.5 g
MS ID	10414060001-MS	MS Filename	U171217A_01	MS Amount	10.5 g
MSD ID	10414060001-MSD	MSD Filename	U171217A_02	MSD Amount	10.4 g

Analyte	Sample Conc. ng/Kg	MS/MSD Qs (ng)	MS Qm (ng)	MSD Qm (ng)	RPD	Background Subtracted MS % Rec.	MSD % Rec.	RPD
2,3,7,8-TCDF	0.000	0.20	0.19	0.21	10.0	95	105	10.0
2,3,7,8-TCDD	0.000	0.20	0.20	0.21	3.9	99	103	3.9
1,2,3,7,8-PeCDF	0.000	1.00	0.99	1.04	5.3	99	104	5.3
2,3,4,7,8-PeCDF	0.000	1.00	0.86	0.93	7.7	86	93	7.7
1,2,3,7,8-PeCDD	0.000	1.00	0.94	0.92	1.8	94	92	1.8
1,2,3,4,7,8-HxCDF	0.000	1.00	0.97	0.96	0.7	97	96	0.7
1,2,3,6,7,8-HxCDF	0.000	1.00	0.90	0.95	5.0	90	95	5.0
2,3,4,6,7,8-HxCDF	0.000	1.00	0.85	0.88	4.3	85	88	4.3
1,2,3,7,8,9-HxCDF	0.000	1.00	0.85	0.98	15.0	85	98	15.0
1,2,3,4,7,8-HxCDD	0.000	1.00	0.99	1.05	6.2	99	105	6.2
1,2,3,6,7,8-HxCDD	0.000	1.00	0.96	0.99	3.8	96	99	3.8
1,2,3,7,8,9-HxCDD	0.000	1.00	0.95	0.97	1.6	95	97	1.6
1,2,3,4,6,7,8-HpCDF	0.000	1.00	0.96	0.97	0.8	96	97	0.8
1,2,3,4,7,8,9-HpCDF	0.000	1.00	0.87	0.90	3.6	87	90	3.6
1,2,3,4,6,7,8-HpCDD	0.000	1.00	0.85	0.89	4.4	85	89	4.4
OCDF	0.000	2.00	1.96	2.01	2.5	98	101	2.5
OCDD	0.000	2.00	1.99	1.93	3.2	99	96	3.2

Definitions

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa

ESS Laboratory

Changes made 12/11/17 - ML

CHAIN OF CUSTODY

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

ESS Lab # 1712199

Turn Time 5-Day **Rush**

Regulatory State

Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1

Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	12/07/17	7:15 PM	Grab	Soil	Type A - Capping Sand - 020	X	X	X	X	X	X	X	X	X	X	X
02	12/07/17	7:19 PM	Grab	Soil	Type A - Capping Sand - 021	X	X	X	X	X	X	X	X	X	X	X
03	12/07/17	7:23 PM	Grab	Soil	Type A - Capping Sand - 022	X	X	X	X	X	X	X	X	X	X	X
04	12/07/17	7:27 PM	Grab	Soil	Type A - Capping Sand - 023	X	X	X	X	X	X	X	X	X	X	X
05	12/07/17	7:31 PM	Grab	Soil	Type A - Capping Sand - 024	X	X	X	X	X	X	X	X	X	X	X
06	12/07/17	7:35 PM	Grab	Soil	Type C - Capping Sand - 014	X	X	X	X	X	X	X	X	X	X	X
07	12/07/17	7:39 PM	Grab	Soil	Type C - Capping Sand - 015	X	X	X	X	X	X	X	X	X	X	X
08	12/07/17	7:43 PM	Grab	Soil	Type C - Capping Sand - 016	X	X	X	X	X	X	X	X	X	X	X
09	12/07/17	7:47 PM	Grab	Soil	Type C - Capping Sand - 017	X	X	X	X	X	X	X	X	X	X	X
10	12/07/17	7:51 PM	Grab	Soil	Type C - Capping Sand - 018	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 Trip Blank NC 12/8/17

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: Y

Seals Intact: NA

Cooler Temperature: 5.3 °C Ia

KPB 12/8/17 8:40

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature]	[signature] 12/8/17 6:00	[signature] 12/8/17 8:40	[signature] 12/8/17 0920
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton SPS 12/08/17			

Changes made 12/11/17 - ML

ESS Laboratory

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CHAIN OF CUSTODY

ESS Lab # 1712199

Turn Time ~~5-Day~~ Rush due 12/12/17

Regulatory State

Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1

Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	12/07/17	7:15 PM	Grab	Soil	Type A - Capping Sand - 020	X	X	X	X	X	X	X	X	X	X	X
02	12/07/17	7:19 PM	Grab	Soil	Type A - Capping Sand - 021	X	X	X	X	X	X	X	X	X	X	X
03	12/07/17	7:23 PM	Grab	Soil	Type A - Capping Sand - 022	X	X	X	X	X	X	X	X	X	X	X
04	12/07/17	7:27 PM	Grab	Soil	Type A - Capping Sand - 023	X	X	X	X	X	X	X	X	X	X	X
05	12/07/17	7:31 PM	Grab	Soil	Type A - Capping Sand - 024	X	X	X	X	X	X	X	X	X	X	X
06	12/07/17	7:35 PM	Grab	Soil	Type C - Capping Sand - 014	X	X	X	X	X	X	X	X	X	X	X
07	12/07/17	7:39 PM	Grab	Soil	Type C - Capping Sand - 015	X	X	X	X	X	X	X	X	X	X	X
08	12/07/17	7:43 PM	Grab	Soil	Type C - Capping Sand - 016	X	X	X	X	X	X	X	X	X	X	X
09	12/07/17	7:47 PM	Grab	Soil	Type C - Capping Sand - 017	X	X	X	X	X	X	X	X	X	X	X
10	12/07/17	7:51 PM	Grab	Soil	Type C - Capping Sand - 018	X	X	X	X	X	X	X	X	X	X	X
11	Trip Blank															

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: ✓
Seals Intact: NA
Cooler Temperature: 5.3 °C

KPB 12/8/17 8:40

Sampled by : Aggregate Industries QC

Comments: Please specify "Other" preservative and containers types in this space

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature]	[signature] 12/8/17 8:40	[signature] 12/8/17 8:40	[signature] 12/8/17 0920
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**
Devon Wilton SPS 12/08/17			

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712199
Date Received: 12/8/2017
Project Due Date: 12/13/2017
Days for Project: 3 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 5.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? (Yes) / No
    ESS Sample IDs: 01 - 10
    Analysis: GS.
    TAT: 72 hr
12. Were VOAs received? Yes / (No)
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
    b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	189114	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	189115	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	189125	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	189145	Yes	NA	Yes	Other	NP	
01	189155	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	189174	Yes	NA	Yes	VOA Vial - Other	Other	
01	189175	Yes	NA	Yes	VOA Vial - Other	Other	
02	189112	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	189113	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	189124	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	189144	Yes	NA	Yes	Other	NP	
02	189154	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	189172	Yes	NA	Yes	VOA Vial - Other	Other	
02	189173	Yes	NA	Yes	VOA Vial - Other	Other	
03	189110	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	189111	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	189123	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	189143	Yes	NA	Yes	Other	NP	
03	189153	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	189170	Yes	NA	Yes	VOA Vial - Other	Other	
03	189171	Yes	NA	Yes	VOA Vial - Other	Other	
04	189108	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	189109	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	189122	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712199
Date Received: 12/8/2017

04	189142	Yes	NA	Yes	Other	NP
04	189152	Yes	NA	Yes	VOA Vial - Methanol	MeOH
04	189168	Yes	NA	Yes	VOA Vial - Other	Other
04	189169	Yes	NA	Yes	VOA Vial - Other	Other
05	189106	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	189107	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	189121	Yes	NA	Yes	4 oz. Jar - Unpres	NP
05	189141	Yes	NA	Yes	Other	NP
05	189151	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	189166	Yes	NA	Yes	VOA Vial - Other	Other
05	189167	Yes	NA	Yes	VOA Vial - Other	Other
06	189104	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	189105	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	189120	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	189140	Yes	NA	Yes	Other	NP
06	189150	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	189164	Yes	NA	Yes	VOA Vial - Other	Other
06	189165	Yes	NA	Yes	VOA Vial - Other	Other
07	189102	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	189103	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	189119	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	189139	Yes	NA	Yes	Other	NP
07	189149	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	189162	Yes	NA	Yes	VOA Vial - Other	Other
07	189163	Yes	NA	Yes	VOA Vial - Other	Other
08	189100	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	189101	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	189118	Yes	NA	Yes	4 oz. Jar - Unpres	NP
08	189138	Yes	NA	Yes	Other	NP
08	189148	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	189160	Yes	NA	Yes	VOA Vial - Other	Other
08	189161	Yes	NA	Yes	VOA Vial - Other	Other
09	189098	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	189099	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	189117	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	189137	Yes	NA	Yes	Other	NP
09	189147	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	189158	Yes	NA	Yes	VOA Vial - Other	Other
09	189159	Yes	NA	Yes	VOA Vial - Other	Other
10	189096	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	189097	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	189116	Yes	NA	Yes	4 oz. Jar - Unpres	NP
10	189136	Yes	NA	Yes	Other	NP
10	189146	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	189156	Yes	NA	Yes	VOA Vial - Other	Other
10	189157	Yes	NA	Yes	VOA Vial - Other	Other
11	189176	Yes	NA	Yes	VOA Vial - Methanol	MeOH
11	189177	Yes	NA	Yes	VOA Vial - Other	Other

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/8/17 0953

Reviewed By: _____ Date & Time: 12/8/17 1002

Delivered By: _____

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab #	1712199
Turn Time	5-Day Rush
Regulatory State	
Reporting Limits	S-1
Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	12/07/17	7:15 PM	Grab	Soil	Type A - Capping Sand - 020	X	X	X	X	X	X	X	X	X	X	X
02	12/07/17	7:19 PM	Grab	Soil	Type A - Capping Sand - 021	X	X	X	X	X	X	X	X	X	X	X
03	12/07/17	7:23 PM	Grab	Soil	Type A - Capping Sand - 022	X	X	X	X	X	X	X	X	X	X	X
04	12/07/17	7:27 PM	Grab	Soil	Type A - Capping Sand - 023	X	X	X	X	X	X	X	X	X	X	X
05	12/07/17	7:31 PM	Grab	Soil	Type A - Capping Sand - 024	X	X	X	X	X	X	X	X	X	X	X
06	12/07/17	7:35 PM	Grab	Soil	Type C - Capping Sand - 014	X	X	X	X	X	X	X	X	X	X	X
07	12/07/17	7:39 PM	Grab	Soil	Type C - Capping Sand - 015	X	X	X	X	X	X	X	X	X	X	X
08	12/07/17	7:43 PM	Grab	Soil	Type C - Capping Sand - 016	X	X	X	X	X	X	X	X	X	X	X
09	12/07/17	7:47 PM	Grab	Soil	Type C - Capping Sand - 017	X	X	X	X	X	X	X	X	X	X	X
10	12/07/17	7:51 PM	Grab	Soil	Type C - Capping Sand - 018	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 Trip Blank NC 12/8/17

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: Y
Seals Intact: NA
Cooler Temperature: 5.3 °C Ia

KPB 12/8/17 8:40

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature]	[signature] 12/8/17 6:00	[signature] 12/8/17 8:40	[signature] 12/8/17 0920
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton SPS 12/08/17			

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1712347

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:36 pm, Dec 26, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses
Pace Analytical - Minneapolis, MN Dioxin

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

SAMPLE RECEIPT

The following samples were received on December 14, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Low Level VOA vials were frozen by ESS Laboratory on December 14, 2017 at 18:20.

Lab Number	Sample Name	Matrix	Analysis
1712347-01	Type C - Capping Sand - 019	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-02	Type C - Capping Sand - 020	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-03	Type C - Capping Sand - 021	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-04	Type C - Capping Sand - 022	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-05	Type C - Capping Sand - 023	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-06	Type C - Capping Sand - 024	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-07	Type C - Capping Sand - 025	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-08	Type B - Capping Sand - 001	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-09	Type B - Capping Sand - 002	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-10	Type B - Capping Sand - 003	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-11	Type B - Capping Sand - 004	Soil	6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712347

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

1712347-09	**Surrogate recovery(ies) above upper control limit (S+).**
	1,2-Dichloroethane-d4 (133% @ 70-130%)
1712347-10	**Surrogate recovery(ies) above upper control limit (S+).**
	1,2-Dichloroethane-d4 (134% @ 70-130%)
1712347-11	**Surrogate recovery(ies) above upper control limit (S+).**
	1,2-Dichloroethane-d4 (131% @ 70-130%)
C7L0260-CCV1	**Continuing Calibration %Diff/Drift is above control limit (CD+).**
	1,1,1-Trichloroethane (21% @ 20%), 2,2-Dichloropropane (21% @ 20%), Bromodichloromethane (26% @ 20%)
C7L0260-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	Naphthalene (22% @ 20%), Tetrahydrofuran (24% @ 20%)
C7L0261-CCV1	**Continuing Calibration %Diff/Drift is above control limit (CD+).**
	2,2-Dichloropropane (21% @ 20%)
C7L0261-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	1,4-Dioxane (23% @ 20%), Tetrahydrofuran (23% @ 20%)
CL71816-BS1	**Blank Spike recovery is above upper control limit (B+).**
	Bromomethane (134% @ 70-130%)

8151A Chlorinated Herbicides

1712347-08	**Modified result**
	MCPA , MCPA [2C]
1712347-08	**Peaks found in the retention time window for MCPA did not confirm by GC/MS.**

8270D Semi-Volatile Organic Compounds

C7L0207-CCV1	**Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
	2,4-Dinitrotoluene (96% @ 80-120%), 2,6-Dinitrotoluene (96% @ 80-120%)
C7L0207-CCV1	**Calibration required quadratic regression (Q).**
	2,4-Dinitrophenol (110% @ 80-120%), Pentachlorophenol (102% @ 80-120%)
C7L0207-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	N-Nitrosodimethylamine (30% @ 20%)
C7L0229-CCV1	**Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
	2,4-Dinitrotoluene (100% @ 80-120%), 2,6-Dinitrotoluene (99% @ 80-120%)
C7L0229-CCV1	**Calibration required quadratic regression (Q).**
	2,4-Dinitrophenol (113% @ 80-120%), Pentachlorophenol (96% @ 80-120%)
C7L0229-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	N-Nitrosodimethylamine (32% @ 20%)
C7L0275-CCV1	**Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
	2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (100% @ 80-120%)
C7L0275-CCV1	**Calibration required quadratic regression (Q).**
	2,4-Dinitrophenol (142% @ 80-120%), Pentachlorophenol (103% @ 80-120%)
C7L0275-CCV1	**Continuing Calibration %Diff/Drift is above control limit (CD+).**

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1712347

2,4-Dinitrophenol (42% @ 20%)

C7L0275-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
bis(2-Chloroethyl)ether (24% @ 20%), N-Nitrosodimethylamine (21% @ 20%), Phenol-d6 (21% @ 20%)

C7L0304-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (103% @ 80-120%)

C7L0304-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (119% @ 80-120%), Pentachlorophenol (111% @ 80-120%)

C7L0304-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (22% @ 20%), N-Nitrosodimethylamine (21% @ 20%)

Classical Chemistry

1712347-03 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

1712347-05 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

1712347-07 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

Total Metals

CL71841-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Barium (21% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.48)		6020A		20	NAR	12/19/17 15:37	2.2	100	CL71841
Arsenic	**11.0** (2.42)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Barium	**22.1** (2.42)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Beryllium	**0.47** (0.11)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Cadmium	ND (0.48)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Chromium	**48.8** (0.97)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Lead	**24.9** (4.84)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Mercury	ND (0.030)		7471B		1	MJV	12/19/17 13:27	0.71	40	CL71842
Nickel	**22.3** (2.42)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Selenium	ND (0.48)		6020A		20	NAR	12/19/17 15:37	2.2	100	CL71841
Silver	ND (0.48)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Thallium	**0.51** (0.48)		6020A		20	NAR	12/19/17 15:37	2.2	100	CL71841
Vanadium	**15.9** (0.97)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Zinc	**28.0** (2.42)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,4-Dioxane	ND (0.0872)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
2-Butanone	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
2-Chlorotoluene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
2-Hexanone	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
4-Chlorotoluene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Acetone	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Benzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Bromobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Bromochloromethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Bromoform	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Bromomethane	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Carbon Disulfide	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Chlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Chloroethane	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Chloroform	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Chloromethane	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Dibromomethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Diethyl Ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Di-isopropyl ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Ethylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Isopropylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Methylene Chloride	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Naphthalene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
n-Butylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
n-Propylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
sec-Butylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Styrene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
tert-Butylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Tetrachloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Tetrahydrofuran	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Toluene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Trichloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Vinyl Chloride	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Xylene O	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Xylene P,M	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Xylenes (Total)	ND (0.0087)		8260B Low		1	12/17/17 22:35		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*126 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*118 %*		*70-130*
Surrogate: Toluene-d8	*95 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
4,4´-DDE	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
4,4´-DDT	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Aldrin	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
alpha-BHC	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
alpha-Chlordane	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
beta-BHC	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Chlordane (Total)	ND (0.0216)		8081B		1	12/15/17 23:51	C7L0248	CL71508
delta-BHC	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Dieldrin	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endosulfan I	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endosulfan II	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endrin	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endrin Ketone	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/15/17 23:51	C7L0248	CL71508
gamma-Chlordane	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Heptachlor	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Hexachlorobenzene	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Methoxychlor	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*108 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 14:51		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*88 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/19/17 23:19	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/19/17 23:19	C7L0277	CL71801
2,4-D	ND (0.050)		8151A		1	12/19/17 23:19	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/19/17 23:19	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/19/17 23:19	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/19/17 23:19	C7L0277	CL71801
Dichlorprop	ND (0.050)		8151A		1	12/19/17 23:19	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/19/17 23:19	C7L0277	CL71801
MCPA	ND (2.45)		8151A		1	12/19/17 23:19	C7L0277	CL71801
MCPP	ND (2.48)		8151A		1	12/19/17 23:19	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*77 %*		*30-150*
Surrogate: DCAA [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
1,2-Dichlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
1,3-Dichlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
1,4-Dichlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4,5-Trichlorophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4,6-Trichlorophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4-Dichlorophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4-Dimethylphenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4-Dinitrophenol	ND (1.88)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4-Dinitrotoluene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,6-Dinitrotoluene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Chloronaphthalene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Chlorophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Methylnaphthalene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Methylphenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Nitrophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
3,3′-Dichlorobenzidine	ND (0.750)		8270D		1	12/19/17 22:24	C7L0275	CL71407
3+4-Methylphenol	ND (0.750)		8270D		1	12/19/17 22:24	C7L0275	CL71407
4-Bromophenyl-phenylether	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
4-Chloroaniline	ND (0.750)		8270D		1	12/19/17 22:24	C7L0275	CL71407
4-Nitrophenol	ND (1.88)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Acenaphthene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Acenaphthylene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Acetophenone	ND (0.750)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Aniline	ND (1.88)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Anthracene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Azobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(a)anthracene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(a)pyrene	ND (0.188)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(b)fluoranthene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(g,h,i)perylene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(k)fluoranthene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
bis(2-Chloroethyl)ether	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
bis(2-chloroisopropyl)Ether	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
bis(2-Ethylhexyl)phthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Butylbenzylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Chrysene	ND (0.188)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Dibenzo(a,h)Anthracene	ND (0.188)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Dibenzofuran	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Diethylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Dimethylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Di-n-butylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Di-n-octylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Fluoranthene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Fluorene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Hexachlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Hexachlorobutadiene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Hexachloroethane	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Indeno(1,2,3-cd)Pyrene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Isophorone	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Naphthalene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Nitrobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
N-Nitrosodimethylamine	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Pentachlorophenol	ND (1.88)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Phenanthrene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Phenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Pyrene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*69 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*83 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*64 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*67 %*		*30-130*				
Surrogate: Phenol-d6		*62 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*75 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (100)		9060		1	DEL	12/22/17 18:00	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.48)		6020A		20	NAR	12/19/17 15:42	2.23	100	CL71841
Arsenic	**5.93** (2.39)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Barium	**16.7** (2.39)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Beryllium	**0.44** (0.11)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Cadmium	ND (0.48)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Chromium	**44.1** (0.96)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Lead	**20.4** (4.78)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Mercury	ND (0.025)		7471B		1	MJV	12/19/17 13:33	0.85	40	CL71842
Nickel	**22.1** (2.39)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Selenium	ND (0.48)		6020A		20	NAR	12/19/17 15:42	2.23	100	CL71841
Silver	ND (0.48)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Thallium	**0.61** (0.48)		6020A		20	NAR	12/19/17 15:42	2.23	100	CL71841
Vanadium	**16.5** (0.96)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Zinc	**28.1** (2.39)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,4-Dioxane	ND (0.101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
2-Butanone	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
2-Chlorotoluene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
2-Hexanone	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
4-Chlorotoluene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Acetone	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Benzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Bromobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Bromochloromethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Bromoform	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Bromomethane	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Carbon Disulfide	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Chlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Chloroethane	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Chloroform	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Chloromethane	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Dibromochloromethane	ND (0.0020)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Dibromomethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Diethyl Ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Di-isopropyl ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Ethylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Isopropylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Methylene Chloride	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Naphthalene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
n-Butylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
n-Propylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
sec-Butylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Styrene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
tert-Butylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Tetrachloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Tetrahydrofuran	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Toluene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Trichloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Vinyl Chloride	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Xylene O	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Xylene P,M	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Xylenes (Total)	ND (0.0101)		8260B Low		1	12/17/17 23:00		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*127 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*118 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
4,4´-DDE	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
4,4´-DDT	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Aldrin	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
alpha-BHC	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
alpha-Chlordane	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
beta-BHC	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Chlordane (Total)	ND (0.0221)		8081B		1	12/16/17 1:19	C7L0248	CL71508
delta-BHC	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Dieldrin	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endosulfan I	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endosulfan II	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endrin	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endrin Ketone	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 1:19	C7L0248	CL71508
gamma-Chlordane	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Heptachlor	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Hexachlorobenzene [2C]	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Methoxychlor	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*100 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*115 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 15:11		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*86 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/19/17 23:51	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/19/17 23:51	C7L0277	CL71801
2,4-D	ND (0.050)		8151A		1	12/19/17 23:51	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/19/17 23:51	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/19/17 23:51	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/19/17 23:51	C7L0277	CL71801
Dichlorprop	ND (0.050)		8151A		1	12/19/17 23:51	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/19/17 23:51	C7L0277	CL71801
MCPA	ND (2.45)		8151A		1	12/19/17 23:51	C7L0277	CL71801
MCPP	ND (2.48)		8151A		1	12/19/17 23:51	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*82 %*		*30-150*
Surrogate: DCAA [2C]	*87 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
1,2-Dichlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
1,3-Dichlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
1,4-Dichlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4,5-Trichlorophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4,6-Trichlorophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4-Dichlorophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4-Dimethylphenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4-Dinitrophenol	ND (1.87)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4-Dinitrotoluene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,6-Dinitrotoluene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Chloronaphthalene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Chlorophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Methylnaphthalene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Methylphenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Nitrophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
3,3′-Dichlorobenzidine	ND (0.746)		8270D		1	12/19/17 22:59	C7L0275	CL71407
3+4-Methylphenol	ND (0.746)		8270D		1	12/19/17 22:59	C7L0275	CL71407
4-Bromophenyl-phenylether	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
4-Chloroaniline	ND (0.746)		8270D		1	12/19/17 22:59	C7L0275	CL71407
4-Nitrophenol	ND (1.87)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Acenaphthene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Acenaphthylene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Acetophenone	ND (0.746)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Aniline	ND (1.87)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Anthracene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Azobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(a)anthracene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(a)pyrene	ND (0.187)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(b)fluoranthene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(g,h,i)perylene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(k)fluoranthene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
bis(2-Chloroethyl)ether	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
bis(2-chloroisopropyl)Ether	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
bis(2-Ethylhexyl)phthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Butylbenzylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Chrysene	ND (0.187)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Dibenzo(a,h)Anthracene	ND (0.187)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Dibenzofuran	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Diethylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Dimethylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Di-n-butylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Di-n-octylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Fluoranthene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Fluorene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Hexachlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Hexachlorobutadiene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Hexachloroethane	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Indeno(1,2,3-cd)Pyrene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Isophorone	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Naphthalene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Nitrobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
N-Nitrosodimethylamine	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Pentachlorophenol	ND (1.87)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Phenanthrene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Phenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Pyrene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*81 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*69 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*62 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*65 %*		*30-130*				
Surrogate: Phenol-d6		*61 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*75 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (100)		9060		1	DEL	12/22/17 1:47	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.51)		6020A		20	NAR	12/19/17 15:48	2.1	100	CL71841
Arsenic	**9.90** (2.55)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Barium	**27.5** (2.55)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Beryllium	**0.48** (0.11)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Cadmium	ND (0.51)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Chromium	**54.2** (1.02)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Lead	**23.9** (5.11)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Mercury	ND (0.033)		7471B		1	MJV	12/19/17 13:35	0.65	40	CL71842
Nickel	**24.3** (2.55)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Selenium	ND (0.51)		6020A		20	NAR	12/19/17 15:48	2.1	100	CL71841
Silver	ND (0.51)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Thallium	**0.51** (0.51)		6020A		20	NAR	12/19/17 15:48	2.1	100	CL71841
Vanadium	**16.6** (1.02)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Zinc	**27.1** (2.55)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,4-Dioxane	ND (0.0894)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
2-Butanone	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
2-Chlorotoluene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
2-Hexanone	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
4-Chlorotoluene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Acetone	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Benzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Bromobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Bromochloromethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Bromoform	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Bromomethane	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Carbon Disulfide	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Chlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Chloroethane	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Chloroform	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Chloromethane	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Dibromomethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Diethyl Ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Di-isopropyl ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Ethylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Isopropylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Methylene Chloride	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Naphthalene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
n-Butylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
n-Propylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
sec-Butylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Styrene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
tert-Butylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Tetrachloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Tetrahydrofuran	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Toluene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Trichloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Vinyl Chloride	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Xylene O	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Xylene P,M	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Xylenes (Total)	ND (0.0089)		8260B Low		1	12/17/17 23:25		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
4,4´-DDE	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
4,4´-DDT	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Aldrin	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
alpha-BHC	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
alpha-Chlordane	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
beta-BHC	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Chlordane (Total)	ND (0.0219)		8081B		1	12/16/17 1:49	C7L0248	CL71508
delta-BHC	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Dieldrin	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endosulfan I	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endosulfan II	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endrin	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endrin Ketone	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/16/17 1:49	C7L0248	CL71508
gamma-Chlordane	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Heptachlor	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Hexachlorobenzene	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Methoxychlor	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 15:30		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*88 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*91 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 0:23	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 0:23	C7L0277	CL71801
2,4-D	ND (0.049)		8151A		1	12/20/17 0:23	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/20/17 0:23	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/20/17 0:23	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 0:23	C7L0277	CL71801
Dichlorprop	ND (0.049)		8151A		1	12/20/17 0:23	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/20/17 0:23	C7L0277	CL71801
MCPA	ND (2.44)		8151A		1	12/20/17 0:23	C7L0277	CL71801
MCPP	ND (2.47)		8151A		1	12/20/17 0:23	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*93 %*		*30-150*
Surrogate: DCAA [2C]	*102 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.84)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Chloronaphthalene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Chlorophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Methylnaphthalene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Methylphenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Nitrophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.735)		8270D		1	12/19/17 23:33	C7L0275	CL71507
3+4-Methylphenol	ND (0.735)		8270D		1	12/19/17 23:33	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
4-Chloroaniline	ND (0.735)		8270D		1	12/19/17 23:33	C7L0275	CL71507
4-Nitrophenol	ND (1.84)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Acenaphthene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Acenaphthylene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Acetophenone	ND (0.735)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Aniline	ND (1.84)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Anthracene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Azobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(a)anthracene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(a)pyrene	ND (0.184)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Butylbenzylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Chrysene	ND (0.184)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.184)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Dibenzofuran	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Diethylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Dimethylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Di-n-butylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Di-n-octylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Fluoranthene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Fluorene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Hexachlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Hexachlorobutadiene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Hexachloroethane	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Isophorone	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Naphthalene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Nitrobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Pentachlorophenol	ND (1.84)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Phenanthrene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Phenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Pyrene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*86 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*82 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*65 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*70 %*		*30-130*				
Surrogate: Phenol-d6		*63 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*74 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**TR 5400** (100)		9060		1	DEL	12/22/17 18:50	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.50)		6020A		20	NAR	12/19/17 15:54	2.18	100	CL71841
Arsenic	**15.6** (2.48)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Barium	**22.0** (2.48)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Beryllium	**0.48** (0.11)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Cadmium	ND (0.50)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Chromium	**47.5** (0.99)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Lead	**24.2** (4.95)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Mercury	ND (0.032)		7471B		1	MJV	12/19/17 13:37	0.66	40	CL71842
Nickel	**25.4** (2.48)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Selenium	ND (0.50)		6020A		20	NAR	12/19/17 15:54	2.18	100	CL71841
Silver	ND (0.50)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Thallium	ND (0.50)		6020A		20	NAR	12/19/17 15:54	2.18	100	CL71841
Vanadium	**14.9** (0.99)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Zinc	**28.0** (2.48)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0021)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,4-Dioxane	ND (0.106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
2-Butanone	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
2-Chlorotoluene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
2-Hexanone	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
4-Chlorotoluene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Acetone	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Benzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Bromobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Bromochloromethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Bromoform	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Bromomethane	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Carbon Disulfide	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Chlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Chloroethane	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Chloroform	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Chloromethane	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Dibromochloromethane	ND (0.0021)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Dibromomethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Diethyl Ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Di-isopropyl ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Ethylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Isopropylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Methylene Chloride	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Naphthalene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
n-Butylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
n-Propylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
sec-Butylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Styrene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
tert-Butylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Tetrachloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Tetrahydrofuran	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Toluene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Trichloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Vinyl Chloride	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Xylene O	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Xylene P,M	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Xylenes (Total)	ND (0.0106)		8260B Low		1	12/17/17 23:51		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
4,4´-DDE	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
4,4´-DDT	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Aldrin	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
alpha-BHC	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
alpha-Chlordane	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
beta-BHC	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Chlordane (Total)	ND (0.0220)		8081B		1	12/16/17 2:18	C7L0248	CL71508
delta-BHC	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Dieldrin	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endosulfan I	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endosulfan II	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endrin	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endrin Ketone	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 2:18	C7L0248	CL71508
gamma-Chlordane	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Heptachlor	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Hexachlorobenzene [2C]	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Methoxychlor	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*93 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*106 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 15:55		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*86 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*57 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 0:56	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 0:56	C7L0277	CL71801
2,4-D	ND (0.050)		8151A		1	12/20/17 0:56	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/20/17 0:56	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/20/17 0:56	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 0:56	C7L0277	CL71801
Dichlorprop	ND (0.050)		8151A		1	12/20/17 0:56	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/20/17 0:56	C7L0277	CL71801
MCPA	ND (2.46)		8151A		1	12/20/17 0:56	C7L0277	CL71801
MCPP	ND (2.49)		8151A		1	12/20/17 0:56	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*89 %*		*30-150*
Surrogate: DCAA [2C]	*101 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.89)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Chloronaphthalene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Chlorophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Methylnaphthalene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Methylphenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Nitrophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.755)		8270D		1	12/20/17 0:07	C7L0275	CL71507
3+4-Methylphenol	ND (0.755)		8270D		1	12/20/17 0:07	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
4-Chloroaniline	ND (0.755)		8270D		1	12/20/17 0:07	C7L0275	CL71507
4-Nitrophenol	ND (1.89)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Acenaphthene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Acenaphthylene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Acetophenone	ND (0.755)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Aniline	ND (1.89)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Anthracene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Azobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(a)anthracene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(a)pyrene	ND (0.189)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Butylbenzylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Chrysene	ND (0.189)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.189)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Dibenzofuran	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Diethylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Dimethylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Di-n-butylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Di-n-octylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Fluoranthene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Fluorene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Hexachlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Hexachlorobutadiene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Hexachloroethane	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Isophorone	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Naphthalene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Nitrobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Pentachlorophenol	ND (1.89)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Phenanthrene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Phenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Pyrene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*84 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*75 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*62 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*65 %*		*30-130*				
Surrogate: Phenol-d6		*62 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*72 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**777** (100)		9060		1	DEL	12/22/17 2:54	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.54)		6020A		20	NAR	12/19/17 16:00	2.05	100	CL71841
Arsenic	**12.8** (2.70)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Barium	**26.5** (2.70)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Beryllium	**0.49** (0.12)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Cadmium	ND (0.54)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Chromium	**52.7** (1.08)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Lead	**26.4** (5.41)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Mercury	ND (0.034)		7471B		1	MJV	12/19/17 13:39	0.65	40	CL71842
Nickel	**23.2** (2.70)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Selenium	ND (0.54)		6020A		20	NAR	12/19/17 16:00	2.05	100	CL71841
Silver	ND (0.54)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Thallium	ND (0.54)		6020A		20	NAR	12/19/17 16:00	2.05	100	CL71841
Vanadium	**16.7** (1.08)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Zinc	**28.6** (2.70)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,4-Dioxane	ND (0.0909)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
2-Butanone	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
2-Chlorotoluene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
2-Hexanone	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
4-Chlorotoluene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Acetone	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Benzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Bromobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Bromochloromethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Bromoform	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Bromomethane	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Carbon Disulfide	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Chlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Chloroethane	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Chloroform	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Chloromethane	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Dibromomethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Diethyl Ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Di-isopropyl ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Ethylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Isopropylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Methylene Chloride	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Naphthalene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
n-Butylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
n-Propylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
sec-Butylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Styrene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
tert-Butylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Tetrachloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Tetrahydrofuran	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Toluene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Trichloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Vinyl Chloride	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Xylene O	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Xylene P,M	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Xylenes (Total)	ND (0.0091)		8260B Low		1	12/18/17 0:16		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*125 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
4,4´-DDE	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
4,4´-DDT	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Aldrin	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
alpha-BHC	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
alpha-Chlordane	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
beta-BHC	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Chlordane (Total)	ND (0.0231)		8081B		1	12/16/17 2:47	C7L0248	CL71508
delta-BHC	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Dieldrin	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endosulfan I	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endosulfan II	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endrin	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endrin Ketone	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 2:47	C7L0248	CL71508
gamma-Chlordane	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Heptachlor	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Hexachlorobenzene	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Methoxychlor	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*107 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 16:12		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*93 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*64 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 1:28	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 1:28	C7L0277	CL71801
2,4-D	ND (0.051)		8151A		1	12/20/17 1:28	C7L0277	CL71801
2,4-DB	ND (0.052)		8151A		1	12/20/17 1:28	C7L0277	CL71801
Dalapon	ND (0.049)		8151A		1	12/20/17 1:28	C7L0277	CL71801
Dicamba [2C]	ND (0.010)		8151A		1	12/20/17 1:28	C7L0277	CL71801
Dichlorprop	ND (0.051)		8151A		1	12/20/17 1:28	C7L0277	CL71801
Dinoseb	ND (0.052)		8151A		1	12/20/17 1:28	C7L0277	CL71801
MCPA	ND (2.53)		8151A		1	12/20/17 1:28	C7L0277	CL71801
MCPP	ND (2.56)		8151A		1	12/20/17 1:28	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*78 %*		*30-150*
Surrogate: DCAA [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.97)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Chloronaphthalene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Chlorophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Methylnaphthalene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Methylphenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Nitrophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.787)		8270D		1	12/20/17 0:41	C7L0275	CL71507
3+4-Methylphenol	ND (0.787)		8270D		1	12/20/17 0:41	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
4-Chloroaniline	ND (0.787)		8270D		1	12/20/17 0:41	C7L0275	CL71507
4-Nitrophenol	ND (1.97)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Acenaphthene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Acenaphthylene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Acetophenone	ND (0.787)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Aniline	ND (1.97)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Anthracene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Azobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(a)anthracene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(a)pyrene	ND (0.197)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Butylbenzylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Chrysene	ND (0.197)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.197)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Dibenzofuran	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Diethylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Dimethylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Di-n-butylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Di-n-octylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Fluoranthene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Fluorene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Hexachlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Hexachlorobutadiene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Hexachloroethane	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Isophorone	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Naphthalene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Nitrobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Pentachlorophenol	ND (1.97)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Phenanthrene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Phenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Pyrene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*62 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*74 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*63 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*57 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*61 %*		*30-130*				
Surrogate: Phenol-d6		*55 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*66 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**TR 4100** (100)		9060		1	DEL	12/22/17 19:07	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.47)		6020A		20	NAR	12/19/17 16:18	2.27	100	CL71841
Arsenic	**10.4** (2.35)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Barium	**20.3** (2.35)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Beryllium	**0.46** (0.10)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Cadmium	ND (0.47)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Chromium	**50.9** (0.94)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Lead	**22.8** (4.70)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Mercury	ND (0.025)		7471B		1	MJV	12/19/17 13:41	0.84	40	CL71842
Nickel	**22.6** (2.35)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Selenium	ND (0.47)		6020A		20	NAR	12/19/17 16:18	2.27	100	CL71841
Silver	ND (0.47)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Thallium	**0.60** (0.47)		6020A		20	NAR	12/19/17 16:18	2.27	100	CL71841
Vanadium	**17.5** (0.94)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Zinc	**29.6** (2.35)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0021)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,4-Dioxane	ND (0.103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
2-Butanone	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
2-Chlorotoluene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
2-Hexanone	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
4-Chlorotoluene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Acetone	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Benzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Bromobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Bromochloromethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Bromoform	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Bromomethane	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Carbon Disulfide	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Chlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Chloroethane	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Chloroform	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Chloromethane	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Dibromochloromethane	ND (0.0021)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Dibromomethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Diethyl Ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Di-isopropyl ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Ethylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Isopropylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Methylene Chloride	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Naphthalene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
n-Butylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
n-Propylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
sec-Butylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Styrene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
tert-Butylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Tetrachloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Tetrahydrofuran	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Toluene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Trichloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Vinyl Chloride	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Xylene O	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Xylene P,M	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Xylenes (Total)	ND (0.0103)		8260B Low		1	12/18/17 0:41		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*130 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*94 %*		*70-130*
Surrogate: Dibromofluoromethane	*121 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
4,4´-DDE	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
4,4´-DDT	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Aldrin	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
alpha-BHC	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
alpha-Chlordane	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
beta-BHC	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Chlordane (Total)	ND (0.0221)		8081B		1	12/16/17 3:17	C7L0248	CL71508
delta-BHC	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Dieldrin	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endosulfan I	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endosulfan II	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endrin	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endrin Ketone	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 3:17	C7L0248	CL71508
gamma-Chlordane	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Heptachlor	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Hexachlorobenzene [2C]	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Methoxychlor	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*104 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*117 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*85 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 16:31		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 5:10	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 5:10	C7L0277	CL71801
2,4-D	ND (0.049)		8151A		1	12/20/17 5:10	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/20/17 5:10	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/20/17 5:10	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 5:10	C7L0277	CL71801
Dichlorprop	ND (0.049)		8151A		1	12/20/17 5:10	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/20/17 5:10	C7L0277	CL71801
MCPA	ND (2.43)		8151A		1	12/20/17 5:10	C7L0277	CL71801
MCPP	ND (2.46)		8151A		1	12/20/17 5:10	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*76 %*		*30-150*
Surrogate: DCAA [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.86)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Chloronaphthalene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Chlorophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Methylnaphthalene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Methylphenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Nitrophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.742)		8270D		1	12/20/17 1:15	C7L0275	CL71507
3+4-Methylphenol	ND (0.742)		8270D		1	12/20/17 1:15	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
4-Chloroaniline	ND (0.742)		8270D		1	12/20/17 1:15	C7L0275	CL71507
4-Nitrophenol	ND (1.86)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Acenaphthene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Acenaphthylene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Acetophenone	ND (0.742)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Aniline	ND (1.86)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Anthracene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Azobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(a)anthracene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(a)pyrene	ND (0.186)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Butylbenzylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Chrysene	ND (0.186)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.186)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Dibenzofuran	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Diethylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Dimethylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Di-n-butylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Di-n-octylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Fluoranthene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Fluorene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Hexachlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Hexachlorobutadiene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Hexachloroethane	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Isophorone	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Naphthalene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Nitrobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Pentachlorophenol	ND (1.86)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Phenanthrene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Phenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Pyrene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*61 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*78 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*62 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*56 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*59 %*		*30-130*				
Surrogate: Phenol-d6		*54 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*71 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**778** (100)		9060		1	DEL	12/22/17 3:27	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.44)		6020A		20	NAR	12/19/17 16:23	2.4	100	CL71841
Arsenic	**8.49** (2.22)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Barium	**20.7** (2.22)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Beryllium	**0.48** (0.10)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Cadmium	ND (0.44)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Chromium	**47.7** (0.89)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Lead	**22.6** (4.44)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Mercury	ND (0.027)		7471B		1	MJV	12/19/17 13:43	0.78	40	CL71842
Nickel	**21.4** (2.22)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Selenium	ND (0.44)		6020A		20	NAR	12/19/17 16:23	2.4	100	CL71841
Silver	ND (0.44)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Thallium	**0.54** (0.44)		6020A		20	NAR	12/19/17 16:23	2.4	100	CL71841
Vanadium	**16.6** (0.89)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Zinc	**30.3** (2.22)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0019)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,4-Dioxane	ND (0.0951)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
2-Butanone	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
2-Chlorotoluene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
2-Hexanone	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
4-Chlorotoluene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Acetone	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Benzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Bromobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Bromochloromethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Bromoform	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Bromomethane	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Carbon Disulfide	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Chlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Chloroethane	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Chloroform	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Chloromethane	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Dibromochloromethane	ND (0.0019)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Dibromomethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Diethyl Ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Di-isopropyl ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Ethylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Isopropylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Methylene Chloride	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Naphthalene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
n-Butylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
n-Propylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
sec-Butylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Styrene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
tert-Butylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Tetrachloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Tetrahydrofuran	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Toluene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Trichloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Vinyl Chloride	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Xylene O	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Xylene P,M	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Xylenes (Total)	ND (0.0095)		8260B Low		1	12/18/17 1:07		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*130 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*121 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
4,4´-DDE	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
4,4´-DDT	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Aldrin	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
alpha-BHC	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
alpha-Chlordane	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
beta-BHC	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Chlordane (Total)	ND (0.0221)		8081B		1	12/16/17 3:46	C7L0248	CL71508
delta-BHC	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Dieldrin	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endosulfan I	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endosulfan II	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endrin	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endrin Ketone	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 3:46	C7L0248	CL71508
gamma-Chlordane	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Heptachlor	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Hexachlorobenzene	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Methoxychlor	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*49 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*57 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 18:47		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 5:42	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 5:42	C7L0277	CL71801
2,4-D	ND (0.049)		8151A		1	12/20/17 5:42	C7L0277	CL71801
2,4-DB	ND (0.049)		8151A		1	12/20/17 5:42	C7L0277	CL71801
Dalapon	ND (0.047)		8151A		1	12/20/17 5:42	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 5:42	C7L0277	CL71801
Dichlorprop	ND (0.049)		8151A		1	12/20/17 5:42	C7L0277	CL71801
Dinoseb	ND (0.049)		8151A		1	12/20/17 5:42	C7L0277	CL71801
MCPA	ND (2.40)		8151A		1	12/20/17 5:42	C7L0277	CL71801
MCPP	ND (2.43)		8151A		1	12/20/17 5:42	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*92 %*		*30-150*
Surrogate: DCAA [2C]	*98 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.84)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Chloronaphthalene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Chlorophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Methylnaphthalene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Methylphenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Nitrophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.735)		8270D		1	12/20/17 1:49	C7L0275	CL71507
3+4-Methylphenol	ND (0.735)		8270D		1	12/20/17 1:49	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
4-Chloroaniline	ND (0.735)		8270D		1	12/20/17 1:49	C7L0275	CL71507
4-Nitrophenol	ND (1.84)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Acenaphthene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Acenaphthylene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Acetophenone	ND (0.735)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Aniline	ND (1.84)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Anthracene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Azobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(a)anthracene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(a)pyrene	ND (0.184)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Butylbenzylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Chrysene	ND (0.184)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.184)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Dibenzofuran	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Diethylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Dimethylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Di-n-butylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Di-n-octylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Fluoranthene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Fluorene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Hexachlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Hexachlorobutadiene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Hexachloroethane	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Isophorone	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Naphthalene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Nitrobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Pentachlorophenol	ND (1.84)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Phenanthrene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Phenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Pyrene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*57 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*73 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*57 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*63 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*52 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*54 %*		*30-130*				
Surrogate: Phenol-d6		*50 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*71 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**TR 2710** (100)		9060		1	DEL	12/22/17 19:56	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.47)		6020A		20	NAR	12/19/17 16:29	2.17	100	CL71841
Arsenic	ND (2.36)		6010C		1	KJK	12/20/17 14:31	2.17	100	CL71841
Barium	**16.2** (2.36)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Beryllium	**0.32** (0.10)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Cadmium	ND (0.47)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Chromium	**16.7** (0.95)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Lead	ND (4.73)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Mercury	ND (0.033)		7471B		1	MJV	12/19/17 13:45	0.62	40	CL71842
Nickel	**16.8** (2.36)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Selenium	ND (0.47)		6020A		20	NAR	12/19/17 16:29	2.17	100	CL71841
Silver	ND (0.47)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Thallium	ND (0.47)		6020A		20	NAR	12/19/17 16:29	2.17	100	CL71841
Vanadium	**56.0** (0.95)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Zinc	**32.1** (2.36)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1,1-Trichloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1,2,2-Tetrachloroethane	ND (0.0016)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1,2-Trichloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1-Dichloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1-Dichloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1-Dichloropropene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2,3-Trichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2,3-Trichloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2,4-Trichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2,4-Trimethylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dibromo-3-Chloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dibromoethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dichloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dichloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,3,5-Trimethylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,3-Dichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,3-Dichloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,4-Dichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,4-Dioxane	ND (0.0814)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
2,2-Dichloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
2-Butanone	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
2-Chlorotoluene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
2-Hexanone	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
4-Chlorotoluene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
4-Isopropyltoluene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
4-Methyl-2-Pentanone	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Acetone	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Benzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Bromobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Bromochloromethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Bromoform	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Bromomethane	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Carbon Disulfide	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Carbon Tetrachloride	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Chlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Chloroethane	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Chloroform	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Chloromethane	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
cis-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
cis-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Dibromochloromethane	ND (0.0016)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Dibromomethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Dichlorodifluoromethane	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Diethyl Ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Di-isopropyl ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Ethyl tertiary-butyl ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Ethylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Hexachlorobutadiene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Isopropylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Methyl tert-Butyl Ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Methylene Chloride	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Naphthalene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
n-Butylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
n-Propylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
sec-Butylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Styrene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
tert-Butylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Tertiary-amyl methyl ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Tetrachloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Tetrahydrofuran	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Toluene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
trans-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Trichloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Trichlorofluoromethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Vinyl Chloride	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Xylene O	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Xylene P,M	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Xylenes (Total)	ND (0.0081)		8260B Low		1	12/18/17 16:00		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*120 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
4,4´-DDE	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
4,4´-DDT	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Aldrin	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
alpha-BHC	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
alpha-Chlordane	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
beta-BHC	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Chlordane (Total)	ND (0.0210)		8081B		1	12/16/17 4:15	C7L0248	CL71508
delta-BHC	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Dieldrin	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endosulfan I	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endosulfan II	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endrin	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endrin Ketone	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/16/17 4:15	C7L0248	CL71508
gamma-Chlordane	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Heptachlor	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Hexachlorobenzene	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Methoxychlor	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*99 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*112 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1221	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1232	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1242	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1248	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1254	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1260	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1262	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1268	ND (0.05)		8082A		1	12/18/17 19:06		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*82 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*74 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 6:14	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 6:14	C7L0277	CL71801
2,4-D	ND (0.047)		8151A		1	12/20/17 6:14	C7L0277	CL71801
2,4-DB	ND (0.048)		8151A		1	12/20/17 6:14	C7L0277	CL71801
Dalapon	ND (0.046)		8151A		1	12/20/17 6:14	C7L0277	CL71801
Dicamba	ND (0.009)		8151A		1	12/20/17 6:14	C7L0277	CL71801
Dichlorprop	ND (0.047)		8151A		1	12/20/17 6:14	C7L0277	CL71801
Dinoseb	ND (0.048)		8151A		1	12/20/17 6:14	C7L0277	CL71801
MCPA	# ND (2.34)		8151A		1	12/20/17 6:14	C7L0277	CL71801
MCPP	ND (2.36)		8151A		1	12/20/17 6:14	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*79 %*		*30-150*
Surrogate: DCAA [2C]	*109 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.71)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Chloronaphthalene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Chlorophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Methylnaphthalene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Methylphenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Nitrophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.684)		8270D		1	12/20/17 2:23	C7L0275	CL71507
3+4-Methylphenol	ND (0.684)		8270D		1	12/20/17 2:23	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
4-Chloroaniline	ND (0.684)		8270D		1	12/20/17 2:23	C7L0275	CL71507
4-Nitrophenol	ND (1.71)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Acenaphthene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Acenaphthylene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Acetophenone	ND (0.684)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Aniline	ND (1.71)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Anthracene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Azobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(a)anthracene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(a)pyrene	ND (0.171)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Butylbenzylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Chrysene	ND (0.171)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.171)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Dibenzofuran	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Diethylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Dimethylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Di-n-butylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Di-n-octylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Fluoranthene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Fluorene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Hexachlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Hexachlorobutadiene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Hexachloroethane	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Isophorone	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Naphthalene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Nitrobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Pentachlorophenol	ND (1.71)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Phenanthrene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Phenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Pyrene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*80 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*63 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*66 %*		*30-130*				
Surrogate: Phenol-d6		*60 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*79 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**2500** (100)		9060		1	DEL	12/22/17 4:00	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.46)		6020A		20	NAR	12/19/17 16:35	2.24	100	CL71841
Arsenic	ND (2.29)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Barium	**16.2** (2.29)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Beryllium	**0.33** (0.10)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Cadmium	ND (0.46)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Chromium	**17.6** (0.92)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Lead	ND (4.58)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Mercury	ND (0.032)		7471B		1	MJV	12/19/17 13:47	0.64	40	CL71842
Nickel	**17.9** (2.29)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Selenium	ND (0.46)		6020A		20	NAR	12/19/17 16:35	2.24	100	CL71841
Silver	ND (0.46)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Thallium	ND (0.46)		6020A		20	NAR	12/19/17 16:35	2.24	100	CL71841
Vanadium	**58.9** (0.92)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Zinc	**33.4** (2.29)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1,1-Trichloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1,2,2-Tetrachloroethane	ND (0.0014)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1,2-Trichloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1-Dichloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1-Dichloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1-Dichloropropene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2,3-Trichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2,3-Trichloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2,4-Trichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2,4-Trimethylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dibromo-3-Chloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dibromoethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dichloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dichloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,3,5-Trimethylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,3-Dichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,3-Dichloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,4-Dichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,4-Dioxane	ND (0.0713)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
2,2-Dichloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
2-Butanone	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
2-Chlorotoluene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
2-Hexanone	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
4-Chlorotoluene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
4-Isopropyltoluene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
4-Methyl-2-Pentanone	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Acetone	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Benzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Bromobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Bromochloromethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Bromoform	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Bromomethane	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Carbon Disulfide	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Carbon Tetrachloride	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Chlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Chloroethane	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Chloroform	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Chloromethane	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
cis-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
cis-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Dibromochloromethane	ND (0.0014)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Dibromomethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Dichlorodifluoromethane	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Diethyl Ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Di-isopropyl ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Ethyl tertiary-butyl ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Ethylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Hexachlorobutadiene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Isopropylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Methyl tert-Butyl Ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Methylene Chloride	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Naphthalene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
n-Butylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
n-Propylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
sec-Butylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Styrene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
tert-Butylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Tertiary-amyl methyl ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Tetrachloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Tetrahydrofuran	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Toluene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
trans-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Trichloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Trichlorofluoromethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Vinyl Chloride	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Xylene O	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Xylene P,M	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Xylenes (Total)	ND (0.0071)		8260B Low		1	12/18/17 16:25		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*133 %*	*S+*	*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*121 %*		*70-130*
Surrogate: Toluene-d8	*95 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
4,4´-DDE	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
4,4´-DDT	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Aldrin	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
alpha-BHC	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
alpha-Chlordane	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
beta-BHC	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Chlordane (Total)	ND (0.0205)		8081B		1	12/16/17 4:45	C7L0248	CL71508
delta-BHC	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Dieldrin	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endosulfan I	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endosulfan II	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endrin	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endrin Ketone	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/16/17 4:45	C7L0248	CL71508
gamma-Chlordane	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Heptachlor	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Hexachlorobenzene	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Methoxychlor	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*38 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*44 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1221	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1232	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1242	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1248	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1254	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1260	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1262	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1268	ND (0.05)		8082A		1	12/18/17 19:26		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 6:46	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 6:46	C7L0277	CL71801
2,4-D	ND (0.048)		8151A		1	12/20/17 6:46	C7L0277	CL71801
2,4-DB	ND (0.048)		8151A		1	12/20/17 6:46	C7L0277	CL71801
Dalapon	ND (0.046)		8151A		1	12/20/17 6:46	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 6:46	C7L0277	CL71801
Dichlorprop	ND (0.048)		8151A		1	12/20/17 6:46	C7L0277	CL71801
Dinoseb	ND (0.048)		8151A		1	12/20/17 6:46	C7L0277	CL71801
MCPA	ND (2.36)		8151A		1	12/20/17 6:46	C7L0277	CL71801
MCPP	ND (2.39)		8151A		1	12/20/17 6:46	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*79 %*		*30-150*
Surrogate: DCAA [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
1,2-Dichlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
1,3-Dichlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
1,4-Dichlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4,5-Trichlorophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4,6-Trichlorophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4-Dichlorophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4-Dimethylphenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4-Dinitrophenol	ND (1.70)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4-Dinitrotoluene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,6-Dinitrotoluene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Chloronaphthalene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Chlorophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Methylnaphthalene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Methylphenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Nitrophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
3,3′-Dichlorobenzidine	ND (0.680)		8270D		1	12/20/17 16:31	C7L0304	CL71507
3+4-Methylphenol	ND (0.680)		8270D		1	12/20/17 16:31	C7L0304	CL71507
4-Bromophenyl-phenylether	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
4-Chloroaniline	ND (0.680)		8270D		1	12/20/17 16:31	C7L0304	CL71507
4-Nitrophenol	ND (1.70)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Acenaphthene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Acenaphthylene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Acetophenone	ND (0.680)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Aniline	ND (1.70)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Anthracene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Azobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(a)anthracene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(a)pyrene	ND (0.170)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(b)fluoranthene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(g,h,i)perylene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(k)fluoranthene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
bis(2-Chloroethyl)ether	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
bis(2-chloroisopropyl)Ether	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Butylbenzylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Chrysene	ND (0.170)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Dibenzo(a,h)Anthracene	ND (0.170)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Dibenzofuran	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Diethylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Dimethylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Di-n-butylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Di-n-octylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Fluoranthene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Fluorene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Hexachlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Hexachlorobutadiene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Hexachloroethane	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Isophorone	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Naphthalene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Nitrobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
N-Nitrosodimethylamine	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Pentachlorophenol	ND (1.70)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Phenanthrene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Phenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Pyrene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*84 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*75 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*79 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*67 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*71 %*		*30-130*				
Surrogate: Phenol-d6		*66 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*77 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**4230** (100)		9060		1	DEL	12/22/17 20:13	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.48)		6020A		20	NAR	12/19/17 16:41	2.15	100	CL71841
Arsenic	**2.52** (2.39)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Barium	**17.4** (2.39)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Beryllium	**0.36** (0.11)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Cadmium	ND (0.48)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Chromium	**22.7** (0.96)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Lead	ND (4.78)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Mercury	ND (0.025)		7471B		1	MJV	12/19/17 13:49	0.8	40	CL71842
Nickel	**20.0** (2.39)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Selenium	ND (0.48)		6020A		20	NAR	12/19/17 16:41	2.15	100	CL71841
Silver	ND (0.48)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Thallium	ND (0.48)		6020A		20	NAR	12/19/17 16:41	2.15	100	CL71841
Vanadium	**56.0** (0.96)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Zinc	**33.6** (2.39)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1,1-Trichloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1,2,2-Tetrachloroethane	ND (0.0015)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1,2-Trichloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1-Dichloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1-Dichloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1-Dichloropropene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2,3-Trichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2,3-Trichloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2,4-Trichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2,4-Trimethylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dibromo-3-Chloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dibromoethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dichloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dichloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,3,5-Trimethylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,3-Dichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,3-Dichloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,4-Dichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,4-Dioxane	ND (0.0767)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
2,2-Dichloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
2-Butanone	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
2-Chlorotoluene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
2-Hexanone	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
4-Chlorotoluene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
4-Isopropyltoluene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
4-Methyl-2-Pentanone	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Acetone	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Benzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Bromobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Bromochloromethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Bromoform	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Bromomethane	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Carbon Disulfide	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Carbon Tetrachloride	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Chlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Chloroethane	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Chloroform	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Chloromethane	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
cis-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
cis-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Dibromochloromethane	ND (0.0015)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Dibromomethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Dichlorodifluoromethane	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Diethyl Ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Di-isopropyl ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Ethyl tertiary-butyl ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Ethylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Hexachlorobutadiene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Isopropylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Methyl tert-Butyl Ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Methylene Chloride	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Naphthalene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
n-Butylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
n-Propylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
sec-Butylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Styrene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
tert-Butylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Tertiary-amyl methyl ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Tetrachloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Tetrahydrofuran	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Toluene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
trans-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Trichloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Trichlorofluoromethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Vinyl Chloride	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Xylene O	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Xylene P,M	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Xylenes (Total)	ND (0.0077)		8260B Low		1	12/18/17 16:51		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*134 %*	*S+*	*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*123 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 20.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
4,4´-DDE	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
4,4´-DDT	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Aldrin	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
alpha-BHC	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
alpha-Chlordane	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
beta-BHC	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Chlordane (Total)	ND (0.0203)		8081B		1	12/16/17 5:14	C7L0248	CL71508
delta-BHC	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Dieldrin	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endosulfan I	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endosulfan II	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endrin	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endrin Ketone	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/16/17 5:14	C7L0248	CL71508
gamma-Chlordane	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Heptachlor	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Hexachlorobenzene	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Methoxychlor	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*100 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*115 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1221	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1232	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1242	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1248	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1254	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1260	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1262	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1268	ND (0.05)		8082A		1	12/18/17 19:45		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*92 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 7:18	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 7:18	C7L0277	CL71801
2,4-D	ND (0.047)		8151A		1	12/20/17 7:18	C7L0277	CL71801
2,4-DB	ND (0.048)		8151A		1	12/20/17 7:18	C7L0277	CL71801
Dalapon	ND (0.046)		8151A		1	12/20/17 7:18	C7L0277	CL71801
Dicamba	ND (0.009)		8151A		1	12/20/17 7:18	C7L0277	CL71801
Dichlorprop	ND (0.047)		8151A		1	12/20/17 7:18	C7L0277	CL71801
Dinoseb	ND (0.048)		8151A		1	12/20/17 7:18	C7L0277	CL71801
MCPA	ND (2.34)		8151A		1	12/20/17 7:18	C7L0277	CL71801
MCPP	ND (2.37)		8151A		1	12/20/17 7:18	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*84 %*		*30-150*
Surrogate: DCAA [2C]	*95 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
1,2-Dichlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
1,3-Dichlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
1,4-Dichlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4,5-Trichlorophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4,6-Trichlorophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4-Dichlorophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4-Dimethylphenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4-Dinitrophenol	ND (1.65)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4-Dinitrotoluene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,6-Dinitrotoluene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Chloronaphthalene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Chlorophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Methylnaphthalene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Methylphenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Nitrophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
3,3′-Dichlorobenzidine	ND (0.659)		8270D		1	12/20/17 17:05	C7L0304	CL71507
3+4-Methylphenol	ND (0.659)		8270D		1	12/20/17 17:05	C7L0304	CL71507
4-Bromophenyl-phenylether	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
4-Chloroaniline	ND (0.659)		8270D		1	12/20/17 17:05	C7L0304	CL71507
4-Nitrophenol	ND (1.65)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Acenaphthene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Acenaphthylene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Acetophenone	ND (0.659)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Aniline	ND (1.65)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Anthracene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Azobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(a)anthracene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(a)pyrene	ND (0.165)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(b)fluoranthene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(g,h,i)perylene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(k)fluoranthene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
bis(2-Chloroethyl)ether	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
bis(2-chloroisopropyl)Ether	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Butylbenzylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Chrysene	ND (0.165)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Dibenzo(a,h)Anthracene	ND (0.165)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Dibenzofuran	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Diethylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Dimethylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Di-n-butylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Di-n-octylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Fluoranthene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Fluorene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Hexachlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Hexachlorobutadiene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Hexachloroethane	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Isophorone	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Naphthalene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Nitrobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
N-Nitrosodimethylamine	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Pentachlorophenol	ND (1.65)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Phenanthrene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Phenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Pyrene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*65 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*71 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*64 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*68 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*57 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*61 %*		*30-130*				
Surrogate: Phenol-d6		*56 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*76 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**3150** (100)		9060		1	DEL	12/22/17 21:03	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.44)		6020A		20	NAR	12/19/17 16:47	2.35	100	CL71841
Arsenic	ND (2.19)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Barium	**18.1** (2.19)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Beryllium	**0.30** (0.10)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Cadmium	ND (0.44)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Chromium	**19.2** (0.88)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Lead	ND (4.38)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Mercury	ND (0.033)		7471B		1	MJV	12/19/17 13:51	0.61	40	CL71842
Nickel	**18.8** (2.19)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Selenium	ND (0.44)		6020A		20	NAR	12/19/17 16:47	2.35	100	CL71841
Silver	ND (0.88)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Thallium	ND (0.44)		6020A		20	NAR	12/19/17 16:47	2.35	100	CL71841
Vanadium	**49.6** (0.88)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Zinc	**34.2** (2.19)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1,1-Trichloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1,2,2-Tetrachloroethane	ND (0.0015)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1,2-Trichloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1-Dichloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1-Dichloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1-Dichloropropene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2,3-Trichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2,3-Trichloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2,4-Trichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2,4-Trimethylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dibromo-3-Chloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dibromoethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dichloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dichloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,3,5-Trimethylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,3-Dichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,3-Dichloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,4-Dichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,4-Dioxane	ND (0.0746)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
2,2-Dichloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
2-Butanone	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
2-Chlorotoluene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
2-Hexanone	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
4-Chlorotoluene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
4-Isopropyltoluene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
4-Methyl-2-Pentanone	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Acetone	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Benzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Bromobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Bromochloromethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Bromoform	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Bromomethane	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Carbon Disulfide	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Carbon Tetrachloride	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Chlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Chloroethane	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Chloroform	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Chloromethane	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
cis-1,2-Dichloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
cis-1,3-Dichloropropene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Dibromochloromethane	ND (0.0015)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Dibromomethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Dichlorodifluoromethane	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Diethyl Ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Di-isopropyl ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Ethyl tertiary-butyl ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Ethylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Hexachlorobutadiene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Isopropylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Methyl tert-Butyl Ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Methylene Chloride	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Naphthalene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
n-Butylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
n-Propylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
sec-Butylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Styrene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
tert-Butylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Tertiary-amyl methyl ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Tetrachloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Tetrahydrofuran	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Toluene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
trans-1,3-Dichloropropene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Trichloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Trichlorofluoromethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Vinyl Chloride	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Xylene O	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Xylene P,M	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Xylenes (Total)	ND (0.0075)		8260B Low		1	12/18/17 17:16		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*131 %*	*S+*	*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*122 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
4,4´-DDE	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
4,4´-DDT	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Aldrin	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
alpha-BHC	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
alpha-Chlordane	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
beta-BHC	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Chlordane (Total)	ND (0.0206)		8081B		1	12/16/17 5:43	C7L0248	CL71508
delta-BHC	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Dieldrin	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endosulfan I	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endosulfan II	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endrin	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endrin Ketone	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/16/17 5:43	C7L0248	CL71508
gamma-Chlordane	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Heptachlor	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Hexachlorobenzene [2C]	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Methoxychlor	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*106 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*119 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 20.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1221	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1232	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1242	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1248	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1254	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1260	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1262	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1268	ND (0.05)		8082A		1	12/18/17 20:04		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*94 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 7:50	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 7:50	C7L0277	CL71801
2,4-D	ND (0.048)		8151A		1	12/20/17 7:50	C7L0277	CL71801
2,4-DB	ND (0.048)		8151A		1	12/20/17 7:50	C7L0277	CL71801
Dalapon	ND (0.046)		8151A		1	12/20/17 7:50	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 7:50	C7L0277	CL71801
Dichlorprop	ND (0.048)		8151A		1	12/20/17 7:50	C7L0277	CL71801
Dinoseb	ND (0.048)		8151A		1	12/20/17 7:50	C7L0277	CL71801
MCPA	ND (2.37)		8151A		1	12/20/17 7:50	C7L0277	CL71801
MCPP	ND (2.39)		8151A		1	12/20/17 7:50	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*81 %*		*30-150*
Surrogate: DCAA [2C]	*90 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
1,2-Dichlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
1,3-Dichlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
1,4-Dichlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4,5-Trichlorophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4,6-Trichlorophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4-Dichlorophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4-Dimethylphenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4-Dinitrophenol	ND (1.77)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4-Dinitrotoluene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,6-Dinitrotoluene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Chloronaphthalene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Chlorophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Methylnaphthalene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Methylphenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Nitrophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
3,3′-Dichlorobenzidine	ND (0.705)		8270D		1	12/20/17 17:39	C7L0304	CL71507
3+4-Methylphenol	ND (0.705)		8270D		1	12/20/17 17:39	C7L0304	CL71507
4-Bromophenyl-phenylether	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
4-Chloroaniline	ND (0.705)		8270D		1	12/20/17 17:39	C7L0304	CL71507
4-Nitrophenol	ND (1.77)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Acenaphthene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Acenaphthylene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Acetophenone	ND (0.705)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Aniline	ND (1.77)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Anthracene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Azobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(a)anthracene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(a)pyrene	ND (0.177)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(b)fluoranthene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(g,h,i)perylene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(k)fluoranthene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
bis(2-Chloroethyl)ether	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
bis(2-chloroisopropyl)Ether	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Butylbenzylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Chrysene	ND (0.177)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Dibenzo(a,h)Anthracene	ND (0.177)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Dibenzofuran	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Diethylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Dimethylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Di-n-butylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Di-n-octylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Fluoranthene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Fluorene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Hexachlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Hexachlorobutadiene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Hexachloroethane	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Isophorone	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Naphthalene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Nitrobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
N-Nitrosodimethylamine	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Pentachlorophenol	ND (1.77)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Phenanthrene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Phenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Pyrene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*72 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*79 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*77 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*65 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*66 %*		*30-130*				
Surrogate: Phenol-d6		*64 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*79 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**3310** (100)		9060		1	DEL	12/22/17 5:23	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
				Total Metals						
Batch CL71841 - 3050B										
Blank										
Antimony	ND	0.50	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	0.50	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	0.50	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	58.6	4.72	mg/kg wet	48.00		122	0-238			
Arsenic	115	9.43	mg/kg wet	123.0		93	80-120			
Barium	280	9.43	mg/kg wet	253.0		111	80-120			
Beryllium	176	0.42	mg/kg wet	192.0		92	80-120			
Cadmium	198	1.89	mg/kg wet	224.0		88	80-120			
Chromium	174	3.77	mg/kg wet	179.0		97	80-120			
Lead	146	18.9	mg/kg wet	145.0		101	80-120			
Nickel	140	9.43	mg/kg wet	143.0		98	80-120			
Selenium	43.9	4.72	mg/kg wet	42.40		104	80-120			
Silver	80.9	1.89	mg/kg wet	81.60		99	80-120			
Thallium	50.7	4.72	mg/kg wet	52.00		98	80-120			
Vanadium	67.1	3.77	mg/kg wet	72.30		93	80-120			
Zinc	710	9.43	mg/kg wet	770.0		92	80-120			
LCS Dup										
Antimony	65.3	4.81	mg/kg wet	48.00		136	0-238	11	30	
Arsenic	117	9.62	mg/kg wet	123.0		95	80-120	2	20	
Barium	227	9.62	mg/kg wet	253.0		90	80-120	21	20	D+
Beryllium	180	0.42	mg/kg wet	192.0		94	80-120	2	20	
Cadmium	207	1.92	mg/kg wet	224.0		92	80-120	4	20	
Chromium	184	3.85	mg/kg wet	179.0		103	80-120	5	20	
Lead	149	19.2	mg/kg wet	145.0		102	80-120	1	20	
Nickel	144	9.62	mg/kg wet	143.0		101	80-120	2	20	
Selenium	47.6	4.81	mg/kg wet	42.40		112	80-120	8	30	
Silver	84.1	1.92	mg/kg wet	81.60		103	80-120	4	20	
Thallium	56.3	4.81	mg/kg wet	52.00		108	80-120	10	30	
Vanadium	70.6	3.85	mg/kg wet	72.30		98	80-120	5	20	
Zinc	747	9.62	mg/kg wet	770.0		97	80-120	5	20	
Reference										
Lead	4270	17.9	mg/kg wet	4490		95	83-113			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CL71842 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	15.5	1.90	mg/kg wet	17.80		87	80-120			
LCS Dup										
Mercury	18.7	1.46	mg/kg wet	17.80		105	80-120	19	20	
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0602*		mg/kg wet	*0.05000*		*120*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0467*		mg/kg wet	*0.05000*		*93*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0573*		mg/kg wet	*0.05000*		*115*	*70-130*			
Surrogate: Toluene-d8	*0.0489*		mg/kg wet	*0.05000*		*98*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
1,1,1-Trichloroethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
1,1,2,2-Tetrachloroethane	0.0431	0.0020	mg/kg wet	0.05000		86	70-130			
1,1,2-Trichloroethane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloroethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
1,1-Dichloroethene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
1,1-Dichloropropene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,4-Trichlorobenzene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,4-Trimethylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromo-3-Chloropropane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
1,2-Dibromoethane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichlorobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,2-Dichloropropane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
1,3,5-Trimethylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichloropropane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,4-Dioxane	0.783	0.100	mg/kg wet	1.000		78	70-130			
2,2-Dichloropropane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
2-Butanone	0.225	0.0100	mg/kg wet	0.2500		90	70-130			
2-Chlorotoluene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
2-Hexanone	0.187	0.0100	mg/kg wet	0.2500		75	70-130			
4-Chlorotoluene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
4-Isopropyltoluene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
4-Methyl-2-Pentanone	0.194	0.0100	mg/kg wet	0.2500		77	70-130			
Acetone	0.225	0.0100	mg/kg wet	0.2500		90	70-130			
Benzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Bromobenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Bromochloromethane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Bromodichloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Bromoform	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Bromomethane	0.0522	0.0100	mg/kg wet	0.05000		104	70-130			
Carbon Disulfide	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Carbon Tetrachloride	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Chlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0441	0.0100	mg/kg wet	0.05000		88	70-130			
Chloroform	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Chloromethane	0.0525	0.0100	mg/kg wet	0.05000		105	70-130			
cis-1,2-Dichloroethene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
cis-1,3-Dichloropropene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Dibromochloromethane	0.0440	0.0020	mg/kg wet	0.05000		88	70-130			
Dibromomethane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Dichlorodifluoromethane	0.0488	0.0100	mg/kg wet	0.05000		98	70-130			
Diethyl Ether	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
Di-isopropyl ether	0.0417	0.0050	mg/kg wet	0.05000		83	70-130			
Ethyl tertiary-butyl ether	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
Ethylbenzene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
Hexachlorobutadiene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Isopropylbenzene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130			
Methyl tert-Butyl Ether	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Methylene Chloride	0.0456	0.0100	mg/kg wet	0.05000		91	70-130			
Naphthalene	0.0368	0.0050	mg/kg wet	0.05000		74	70-130			
n-Butylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
n-Propylbenzene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
sec-Butylbenzene	0.0356	0.0050	mg/kg wet	0.05000		71	70-130			
Styrene	0.0384	0.0050	mg/kg wet	0.05000		77	70-130			
tert-Butylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Tertiary-amyl methyl ether	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Tetrachloroethene	0.0408	0.0050	mg/kg wet	0.05000		82	70-130			
Tetrahydrofuran	0.0348	0.0050	mg/kg wet	0.05000		70	70-130			
Toluene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
trans-1,2-Dichloroethene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
trans-1,3-Dichloropropene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Trichloroethene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
Trichlorofluoromethane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Vinyl Chloride	0.0512	0.0100	mg/kg wet	0.05000		102	70-130			
Xylene O	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
Xylene P,M	0.0857	0.0100	mg/kg wet	0.1000		86	70-130			
Xylenes (Total)	0.130	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0575*		mg/kg wet	*0.05000*		*115*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0517*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0553*		mg/kg wet	*0.05000*		*111*	*70-130*			
Surrogate: Toluene-d8	*0.0492*		mg/kg wet	*0.05000*		*98*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	4	20	
1,1,1-Trichloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	4	20	
1,1,2,2-Tetrachloroethane	0.0464	0.0020	mg/kg wet	0.05000		93	70-130	7	20	
1,1,2-Trichloroethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	4	20	
1,1-Dichloroethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
1,1-Dichloroethene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	7	20	
1,1-Dichloropropene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	5	20	
1,2,3-Trichlorobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	5	20	
1,2,3-Trichloropropane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	20	
1,2,4-Trichlorobenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	4	20	
1,2,4-Trimethylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	6	20	
1,2-Dibromo-3-Chloropropane	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	5	20	
1,2-Dibromoethane	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	5	20	
1,2-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	6	20	
1,2-Dichloroethane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	4	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
1,2-Dichloropropane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	5	20	
1,3,5-Trimethylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	7	20	
1,3-Dichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	4	20	
1,3-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	3	20	
1,4-Dichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	5	20	
1,4-Dioxane	0.838	0.100	mg/kg wet	1.000		84	70-130	7	20	
2,2-Dichloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	5	20	
2-Butanone	0.233	0.0100	mg/kg wet	0.2500		93	70-130	4	20	
2-Chlorotoluene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	8	20	
2-Hexanone	0.193	0.0100	mg/kg wet	0.2500		77	70-130	3	20	
4-Chlorotoluene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	5	20	
4-Isopropyltoluene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	6	20	
4-Methyl-2-Pentanone	0.201	0.0100	mg/kg wet	0.2500		80	70-130	4	20	
Acetone	0.235	0.0100	mg/kg wet	0.2500		94	70-130	4	20	
Benzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
Bromobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	8	20	
Bromochloromethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	3	20	
Bromodichloromethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	4	20	
Bromoform	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
Bromomethane	0.0576	0.0100	mg/kg wet	0.05000		115	70-130	10	20	
Carbon Disulfide	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	4	20	
Carbon Tetrachloride	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	4	20	
Chlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
Chloroethane	0.0456	0.0100	mg/kg wet	0.05000		91	70-130	3	20	
Chloroform	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
Chloromethane	0.0537	0.0100	mg/kg wet	0.05000		107	70-130	2	20	
cis-1,2-Dichloroethene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
cis-1,3-Dichloropropene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	5	20	
Dibromochloromethane	0.0458	0.0020	mg/kg wet	0.05000		92	70-130	4	20	
Dibromomethane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	3	20	
Dichlorodifluoromethane	0.0500	0.0100	mg/kg wet	0.05000		100	70-130	2	20	
Diethyl Ether	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	5	20	
Di-isopropyl ether	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	5	20	
Ethyl tertiary-butyl ether	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	6	20	
Ethylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	5	20	
Hexachlorobutadiene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	7	20	
Isopropylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	8	20	
Methyl tert-Butyl Ether	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	6	20	
Methylene Chloride	0.0472	0.0100	mg/kg wet	0.05000		94	70-130	3	20	
Naphthalene	0.0392	0.0050	mg/kg wet	0.05000		78	70-130	6	20	
n-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	5	20	
n-Propylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	7	20	
sec-Butylbenzene	0.0378	0.0050	mg/kg wet	0.05000		76	70-130	6	20	
Styrene	0.0401	0.0050	mg/kg wet	0.05000		80	70-130	4	20	
tert-Butylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	8	20	

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Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
Tertiary-amyl methyl ether	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	6	20	
Tetrachloroethene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130	5	20	
Tetrahydrofuran	0.0369	0.0050	mg/kg wet	0.05000		74	70-130	6	20	
Toluene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
trans-1,2-Dichloroethene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	6	20	
trans-1,3-Dichloropropene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	6	20	
Trichloroethene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	3	20	
Trichlorofluoromethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	4	20	
Vinyl Chloride	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	2	20	
Xylene O	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	3	20	
Xylene P,M	0.0893	0.0100	mg/kg wet	0.1000		89	70-130	4	20	
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0559*		mg/kg wet	*0.05000*		*112*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0505*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0544*		mg/kg wet	*0.05000*		*109*	*70-130*			
Surrogate: Toluene-d8	*0.0495*		mg/kg wet	*0.05000*		*99*	*70-130*			
Batch CL71816 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
Surrogate: 1,2-Dichloroethane-d4	*0.0597*		mg/kg wet	*0.05000*		*119*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0481*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0568*		mg/kg wet	*0.05000*		*114*	*70-130*			
Surrogate: Toluene-d8	*0.0481*		mg/kg wet	*0.05000*		*96*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
1,1,1-Trichloroethane	0.0650	0.0050	mg/kg wet	0.05000		130	70-130			
1,1,2,2-Tetrachloroethane	0.0510	0.0020	mg/kg wet	0.05000		102	70-130			
1,1,2-Trichloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
1,1-Dichloroethene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloropropene	0.0592	0.0050	mg/kg wet	0.05000		118	70-130			
1,2,3-Trichlorobenzene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,2,3-Trichloropropane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
1,2,4-Trichlorobenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,2,4-Trimethylbenzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
1,2-Dibromo-3-Chloropropane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dibromoethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dichlorobenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dichloroethane	0.0603	0.0050	mg/kg wet	0.05000		121	70-130			
1,2-Dichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
1,3,5-Trimethylbenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
1,3-Dichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
1,3-Dichloropropane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
1,4-Dichlorobenzene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
1,4-Dioxane	0.950	0.100	mg/kg wet	1.000		95	70-130			
2,2-Dichloropropane	0.0631	0.0050	mg/kg wet	0.05000		126	70-130			
2-Butanone	0.275	0.0100	mg/kg wet	0.2500		110	70-130			
2-Chlorotoluene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
2-Hexanone	0.222	0.0100	mg/kg wet	0.2500		89	70-130			
4-Chlorotoluene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
4-Isopropyltoluene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
4-Methyl-2-Pentanone	0.240	0.0100	mg/kg wet	0.2500		96	70-130			
Acetone	0.279	0.0100	mg/kg wet	0.2500		112	70-130			
Benzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Bromobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Bromochloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromodichloromethane	0.0635	0.0050	mg/kg wet	0.05000		127	70-130			
Bromoform	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
Bromomethane	0.0670	0.0100	mg/kg wet	0.05000		134	70-130			B+
Carbon Disulfide	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
Carbon Tetrachloride	0.0628	0.0050	mg/kg wet	0.05000		126	70-130			
Chlorobenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Chloroethane	0.0541	0.0100	mg/kg wet	0.05000		108	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
Chloroform	0.0568	0.0050	mg/kg wet	0.05000		114	70-130			
Chloromethane	0.0637	0.0100	mg/kg wet	0.05000		127	70-130			
cis-1,2-Dichloroethene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
cis-1,3-Dichloropropene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromochloromethane	0.0504	0.0020	mg/kg wet	0.05000		101	70-130			
Dibromomethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Dichlorodifluoromethane	0.0615	0.0100	mg/kg wet	0.05000		123	70-130			
Diethyl Ether	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Di-isopropyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Ethylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Hexachlorobutadiene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130			
Isopropylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Methyl tert-Butyl Ether	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
Methylene Chloride	0.0554	0.0100	mg/kg wet	0.05000		111	70-130			
Naphthalene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
n-Butylbenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
n-Propylbenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
sec-Butylbenzene	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
Styrene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
tert-Butylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Tertiary-amyl methyl ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Tetrachloroethene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Tetrahydrofuran	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
Toluene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
trans-1,2-Dichloroethene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,3-Dichloropropene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Trichloroethene	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Trichlorofluoromethane	0.0618	0.0050	mg/kg wet	0.05000		124	70-130			
Vinyl Chloride	0.0640	0.0100	mg/kg wet	0.05000		128	70-130			
Xylene O	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Xylene P,M	0.102	0.0100	mg/kg wet	0.1000		102	70-130			
Xylenes (Total)	0.154	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0593*		mg/kg wet	*0.05000*		*119*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0511*		mg/kg wet	*0.05000*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0561*		mg/kg wet	*0.05000*		*112*	*70-130*			
Surrogate: Toluene-d8	*0.0477*		mg/kg wet	*0.05000*		*95*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	1	20	
1,1,1-Trichloroethane	0.0611	0.0050	mg/kg wet	0.05000		122	70-130	6	20	
1,1,2,2-Tetrachloroethane	0.0496	0.0020	mg/kg wet	0.05000		99	70-130	3	20	
1,1,2-Trichloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	4	20	
1,1-Dichloroethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
1,1-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
1,1-Dichloropropene	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	4	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
1,2,3-Trichlorobenzene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	1	20	
1,2,3-Trichloropropane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	1	20	
1,2,4-Trichlorobenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	0.4	20	
1,2,4-Trimethylbenzene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	2	20	
1,2-Dibromo-3-Chloropropane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	20	
1,2-Dibromoethane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	3	20	
1,2-Dichlorobenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	1	20	
1,2-Dichloroethane	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	4	20	
1,2-Dichloropropane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	3	20	
1,3,5-Trimethylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	2	20	
1,3-Dichlorobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	0.2	20	
1,3-Dichloropropane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	2	20	
1,4-Dichlorobenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	20	
1,4-Dioxane	0.947	0.100	mg/kg wet	1.000		95	70-130	0.4	20	
2,2-Dichloropropane	0.0603	0.0050	mg/kg wet	0.05000		121	70-130	5	20	
2-Butanone	0.263	0.0100	mg/kg wet	0.2500		105	70-130	4	20	
2-Chlorotoluene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	20	
2-Hexanone	0.227	0.0100	mg/kg wet	0.2500		91	70-130	2	20	
4-Chlorotoluene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	2	20	
4-Isopropyltoluene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
4-Methyl-2-Pentanone	0.232	0.0100	mg/kg wet	0.2500		93	70-130	3	20	
Acetone	0.271	0.0100	mg/kg wet	0.2500		108	70-130	3	20	
Benzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	4	20	
Bromobenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	1	20	
Bromochloromethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
Bromodichloromethane	0.0603	0.0050	mg/kg wet	0.05000		121	70-130	5	20	
Bromoform	0.0583	0.0050	mg/kg wet	0.05000		117	70-130	3	20	
Bromomethane	0.0598	0.0100	mg/kg wet	0.05000		120	70-130	11	20	
Carbon Disulfide	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	5	20	
Carbon Tetrachloride	0.0592	0.0050	mg/kg wet	0.05000		118	70-130	6	20	
Chlorobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	1	20	
Chloroethane	0.0526	0.0100	mg/kg wet	0.05000		105	70-130	3	20	
Chloroform	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	4	20	
Chloromethane	0.0610	0.0100	mg/kg wet	0.05000		122	70-130	4	20	
cis-1,2-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	5	20	
cis-1,3-Dichloropropene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	2	20	
Dibromochloromethane	0.0508	0.0020	mg/kg wet	0.05000		102	70-130	0.8	20	
Dibromomethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	4	20	
Dichlorodifluoromethane	0.0580	0.0100	mg/kg wet	0.05000		116	70-130	6	20	
Diethyl Ether	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	2	20	
Di-isopropyl ether	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	2	20	
Ethyl tertiary-butyl ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	2	20	
Ethylbenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
Hexachlorobutadiene	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	2	20	
Isopropylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	1	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
Methyl tert-Butyl Ether	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
Methylene Chloride	0.0534	0.0100	mg/kg wet	0.05000		107	70-130	4	20	
Naphthalene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	1	20	
n-Butylbenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
n-Propylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	1	20	
sec-Butylbenzene	0.0415	0.0050	mg/kg wet	0.05000		83	70-130	1	20	
Styrene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	2	20	
tert-Butylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	0.5	20	
Tertiary-amyl methyl ether	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
Tetrahydrofuran	0.0425	0.0050	mg/kg wet	0.05000		85	70-130	2	20	
Toluene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
trans-1,2-Dichloroethene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	2	20	
trans-1,3-Dichloropropene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	3	20	
Trichloroethene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	5	20	
Trichlorofluoromethane	0.0583	0.0050	mg/kg wet	0.05000		117	70-130	6	20	
Vinyl Chloride	0.0608	0.0100	mg/kg wet	0.05000		122	70-130	5	20	
Xylene O	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	2	20	
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130	2	20	
Xylenes (Total)	0.157	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0585*		mg/kg wet	*0.05000*		*117*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0535*		mg/kg wet	*0.05000*		*107*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0555*		mg/kg wet	*0.05000*		*111*	*70-130*			
Surrogate: Toluene-d8	*0.0503*		mg/kg wet	*0.05000*		*101*	*70-130*			
8081B Organochlorine Pesticides										
Batch CL71508 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71508 - 3546										
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0128*		mg/kg wet	*0.01250*		*103*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0141*		mg/kg wet	*0.01250*		*113*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00982*		mg/kg wet	*0.01250*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0113*		mg/kg wet	*0.01250*		*91*	*30-150*			
LCS										
4,4´-DDD	0.0098	0.0025	mg/kg wet	0.01250		78	40-140			
4,4´-DDD [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
4,4´-DDE	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
4,4´-DDE [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
4,4´-DDT	0.0092	0.0025	mg/kg wet	0.01250		74	40-140			
4,4´-DDT [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Aldrin	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Aldrin [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
alpha-BHC	0.0098	0.0025	mg/kg wet	0.01250		78	40-140			
alpha-BHC [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
alpha-Chlordane	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
alpha-Chlordane [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
beta-BHC	0.0091	0.0025	mg/kg wet	0.01250		73	40-140			
beta-BHC [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
delta-BHC	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
delta-BHC [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71508 - 3546										
Dieldrin	0.0106	0.0025	mg/kg wet	0.01250		84	40-140			
Dieldrin [2C]	0.0123	0.0025	mg/kg wet	0.01250		99	40-140			
Endosulfan I	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Endosulfan I [2C]	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan II	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
Endosulfan II [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Endosulfan Sulfate	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
Endosulfan Sulfate [2C]	0.0113	0.0025	mg/kg wet	0.01250		91	40-140			
Endrin	0.0101	0.0025	mg/kg wet	0.01250		81	40-140			
Endrin [2C]	0.0118	0.0025	mg/kg wet	0.01250		95	40-140			
Endrin Ketone	0.0101	0.0025	mg/kg wet	0.01250		81	40-140			
Endrin Ketone [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
gamma-BHC (Lindane)	0.0097	0.0015	mg/kg wet	0.01250		77	40-140			
gamma-BHC (Lindane) [2C]	0.0117	0.0015	mg/kg wet	0.01250		93	40-140			
gamma-Chlordane	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
gamma-Chlordane [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Heptachlor	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
Heptachlor [2C]	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
Heptachlor Epoxide	0.0102	0.0025	mg/kg wet	0.01250		81	40-140			
Heptachlor Epoxide [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
Hexachlorobenzene	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Hexachlorobenzene [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140			
Methoxychlor	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
Methoxychlor [2C]	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
Surrogate: Decachlorobiphenyl	*0.0125*		mg/kg wet	*0.01250*		*100*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0143*		mg/kg wet	*0.01250*		*114*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00990*		mg/kg wet	*0.01250*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0116*		mg/kg wet	*0.01250*		*93*	*30-150*			
LCS Dup										
4,4´-DDD	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	6	30	
4,4´-DDD [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	5	30	
4,4´-DDE	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	6	30	
4,4´-DDE [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	5	30	
4,4´-DDT	0.0099	0.0025	mg/kg wet	0.01250		80	40-140	8	30	
4,4´-DDT [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	6	30	
Aldrin	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	5	30	
Aldrin [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	5	30	
alpha-BHC	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	6	30	
alpha-BHC [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	5	30	
alpha-Chlordane	0.0103	0.0025	mg/kg wet	0.01250		82	40-140	6	30	
alpha-Chlordane [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
beta-BHC	0.0091	0.0025	mg/kg wet	0.01250		73	40-140	0.6	30	
beta-BHC [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	3	30	
delta-BHC	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	6	30	

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8081B Organochlorine Pesticides										
Batch CL71508 - 3546										
delta-BHC [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	5	30	
Dieldrin	0.0112	0.0025	mg/kg wet	0.01250		89	40-140	6	30	
Dieldrin [2C]	0.0130	0.0025	mg/kg wet	0.01250		104	40-140	5	30	
Endosulfan I	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	5	30	
Endosulfan I [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	5	30	
Endosulfan II	0.0102	0.0025	mg/kg wet	0.01250		82	40-140	6	30	
Endosulfan II [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
Endosulfan Sulfate	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	9	30	
Endosulfan Sulfate [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
Endrin	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	6	30	
Endrin [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140	5	30	
Endrin Ketone	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	8	30	
Endrin Ketone [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	5	30	
gamma-BHC (Lindane)	0.0102	0.0015	mg/kg wet	0.01250		82	40-140	6	30	
gamma-BHC (Lindane) [2C]	0.0122	0.0015	mg/kg wet	0.01250		97	40-140	4	30	
gamma-Chlordane	0.0103	0.0025	mg/kg wet	0.01250		83	40-140	6	30	
gamma-Chlordane [2C]	0.0122	0.0025	mg/kg wet	0.01250		97	40-140	5	30	
Heptachlor	0.0100	0.0025	mg/kg wet	0.01250		80	40-140	6	30	
Heptachlor [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	5	30	
Heptachlor Epoxide	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	6	30	
Heptachlor Epoxide [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	5	30	
Hexachlorobenzene	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	4	30	
Hexachlorobenzene [2C]	0.0127	0.0025	mg/kg wet	0.01250		102	40-140	3	30	
Methoxychlor	0.0098	0.0025	mg/kg wet	0.01250		79	40-140	9	30	
Methoxychlor [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	7	30	
Surrogate: Decachlorobiphenyl	*0.0132*		mg/kg wet	*0.01250*		*105*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0147*		mg/kg wet	*0.01250*		*117*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0100*		mg/kg wet	*0.01250*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71502 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							

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8082A Polychlorinated Biphenyls (PCB)										
Batch CL71502 - 3540C										
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0204*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0219*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0192*		mg/kg wet	*0.02500*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0200*		mg/kg wet	*0.02500*		*80*	*30-150*			
LCS										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		85	40-140			
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		90	40-140			
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		86	40-140			
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		82	40-140			
Surrogate: Decachlorobiphenyl	*0.0220*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0227*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0200*		mg/kg wet	*0.02500*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
LCS Dup										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		82	40-140	4	30	
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		86	40-140	4	30	
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		84	40-140	3	30	
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		89	40-140	9	30	
Surrogate: Decachlorobiphenyl	*0.0217*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0192*		mg/kg wet	*0.02500*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0195*		mg/kg wet	*0.02500*		*78*	*30-150*			
8151A Chlorinated Herbicides										
Batch CL71801 - 3546										
Blank										
2,4,5-T	ND	0.010	mg/kg wet							
2,4,5-T [2C]	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex)	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	0.010	mg/kg wet							
2,4-D	ND	0.047	mg/kg wet							
2,4-D [2C]	ND	0.047	mg/kg wet							
2,4-DB	ND	0.048	mg/kg wet							
2,4-DB [2C]	ND	0.048	mg/kg wet							
Dalapon	ND	0.046	mg/kg wet							

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8151A Chlorinated Herbicides										
Batch CL71801 - 3546										
Dalapon [2C]	ND	0.046	mg/kg wet							
Dicamba	ND	0.009	mg/kg wet							
Dicamba [2C]	ND	0.009	mg/kg wet							
Dichlorprop	ND	0.047	mg/kg wet							
Dichlorprop [2C]	ND	0.047	mg/kg wet							
Dinoseb	ND	0.048	mg/kg wet							
Dinoseb [2C]	ND	0.048	mg/kg wet							
MCPA	ND	2.32	mg/kg wet							
MCPA [2C]	ND	2.32	mg/kg wet							
MCPP	ND	2.35	mg/kg wet							
MCPP [2C]	ND	2.35	mg/kg wet							
Surrogate: DCAA	*0.171*		mg/kg wet	*0.2000*		*85*	*30-150*			
Surrogate: DCAA [2C]	*0.176*		mg/kg wet	*0.2000*		*88*	*30-150*			
LCS										
2,4,5-T	0.014	0.010	mg/kg wet	0.01900		74	40-140			
2,4,5-T [2C]	0.014	0.010	mg/kg wet	0.01900		74	40-140			
2,4,5-TP (Silvex)	0.015	0.010	mg/kg wet	0.01900		80	40-140			
2,4,5-TP (Silvex) [2C]	0.015	0.010	mg/kg wet	0.01900		78	40-140			
2,4-D	0.130	0.047	mg/kg wet	0.1880		69	40-140			
2,4-D [2C]	0.148	0.047	mg/kg wet	0.1880		79	40-140			
2,4-DB	0.149	0.048	mg/kg wet	0.1900		78	40-140			
2,4-DB [2C]	0.146	0.048	mg/kg wet	0.1900		77	40-140			
Dalapon	0.304	0.046	mg/kg wet	0.4550		67	40-140			
Dalapon [2C]	0.385	0.046	mg/kg wet	0.4550		85	40-140			
Dicamba	0.017	0.009	mg/kg wet	0.01880		88	40-140			
Dicamba [2C]	0.016	0.009	mg/kg wet	0.01880		86	40-140			
Dichlorprop	0.157	0.047	mg/kg wet	0.1880		83	40-140			
Dichlorprop [2C]	0.160	0.047	mg/kg wet	0.1880		85	40-140			
Dinoseb	0.011	0.048	mg/kg wet	0.09500		11	10-100			
Dinoseb [2C]	0.011	0.048	mg/kg wet	0.09500		12	10-100			
MCPA	17.1	2.32	mg/kg wet	18.60		92	40-140			
MCPA [2C]	14.5	2.32	mg/kg wet	18.60		78	40-140			
MCPP	14.4	2.35	mg/kg wet	18.80		76	40-140			
MCPP [2C]	16.2	2.35	mg/kg wet	18.80		86	40-140			
Surrogate: DCAA	*0.175*		mg/kg wet	*0.2000*		*87*	*30-150*			
Surrogate: DCAA [2C]	*0.182*		mg/kg wet	*0.2000*		*91*	*30-150*			
LCS Dup										
2,4,5-T	0.017	0.010	mg/kg wet	0.01900		88	40-140	17	30	
2,4,5-T [2C]	0.016	0.010	mg/kg wet	0.01900		86	40-140	15	30	
2,4,5-TP (Silvex)	0.017	0.010	mg/kg wet	0.01900		92	40-140	14	30	
2,4,5-TP (Silvex) [2C]	0.017	0.010	mg/kg wet	0.01900		88	40-140	12	30	
2,4-D	0.149	0.047	mg/kg wet	0.1880		79	40-140	14	30	
2,4-D [2C]	0.156	0.047	mg/kg wet	0.1880		83	40-140	5	30	
2,4-DB	0.168	0.048	mg/kg wet	0.1900		88	40-140	12	30	

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8151A Chlorinated Herbicides										
Batch CL71801 - 3546										
2,4-DB [2C]	0.170	0.048	mg/kg wet	0.1900		89	40-140	15	30	
Dalapon	0.345	0.046	mg/kg wet	0.4550		76	40-140	13	30	
Dalapon [2C]	0.419	0.046	mg/kg wet	0.4550		92	40-140	8	30	
Dicamba	0.017	0.009	mg/kg wet	0.01880		90	40-140	2	30	
Dicamba [2C]	0.018	0.009	mg/kg wet	0.01880		96	40-140	11	30	
Dichlorprop	0.179	0.047	mg/kg wet	0.1880		95	40-140	13	30	
Dichlorprop [2C]	0.184	0.047	mg/kg wet	0.1880		98	40-140	14	30	
Dinoseb	0.012	0.048	mg/kg wet	0.09500		13	10-100	13	30	
Dinoseb [2C]	0.012	0.048	mg/kg wet	0.09500		13	10-100	6	30	
MCPA	17.3	2.32	mg/kg wet	18.60		93	40-140	1	30	
MCPA [2C]	16.8	2.32	mg/kg wet	18.60		90	40-140	15	30	
MCPP	16.7	2.35	mg/kg wet	18.80		89	40-140	15	30	
MCPP [2C]	17.1	2.35	mg/kg wet	18.80		91	40-140	5	30	
Surrogate: DCAA	*0.184*		mg/kg wet	*0.2000*		*92*	*30-150*			
Surrogate: DCAA [2C]	*0.193*		mg/kg wet	*0.2000*		*97*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CL71407 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							

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8270D Semi-Volatile Organic Compounds										
Batch CL71407 - 3546										
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.15*		mg/kg wet	*3.333*		*64*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.42*		mg/kg wet	*5.000*		*68*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.20*		mg/kg wet	*5.000*		*64*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.40*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: 2-Fluorophenol	*2.85*		mg/kg wet	*5.000*		*57*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.23*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: Phenol-d6	*2.96*		mg/kg wet	*5.000*		*59*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.84*		mg/kg wet	*3.333*		*85*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.99	0.333	mg/kg wet	3.333		90	40-140			
1,2-Dichlorobenzene	2.66	0.333	mg/kg wet	3.333		80	40-140			
1,3-Dichlorobenzene	2.63	0.333	mg/kg wet	3.333		79	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71407 - 3546										
1,4-Dichlorobenzene	2.64	0.333	mg/kg wet	3.333		79	40-140			
2,4,5-Trichlorophenol	3.20	0.333	mg/kg wet	3.333		96	30-130			
2,4,6-Trichlorophenol	3.36	0.333	mg/kg wet	3.333		101	30-130			
2,4-Dichlorophenol	3.03	0.333	mg/kg wet	3.333		91	30-130			
2,4-Dimethylphenol	2.68	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dinitrophenol	3.08	1.67	mg/kg wet	3.333		92	30-130			
2,4-Dinitrotoluene	2.46	0.333	mg/kg wet	3.333		74	40-140			
2,6-Dinitrotoluene	2.65	0.333	mg/kg wet	3.333		80	40-140			
2-Chloronaphthalene	2.66	0.333	mg/kg wet	3.333		80	40-140			
2-Chlorophenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
2-Methylnaphthalene	2.83	0.333	mg/kg wet	3.333		85	40-140			
2-Methylphenol	2.82	0.333	mg/kg wet	3.333		85	30-130			
2-Nitrophenol	3.03	0.333	mg/kg wet	3.333		91	30-130			
3,3´-Dichlorobenzidine	2.67	0.667	mg/kg wet	3.333		80	40-140			
3+4-Methylphenol	5.19	0.667	mg/kg wet	6.667		78	30-130			
4-Bromophenyl-phenylether	3.70	0.333	mg/kg wet	3.333		111	40-140			
4-Chloroaniline	1.68	0.667	mg/kg wet	3.333		50	40-140			
4-Nitrophenol	2.00	1.67	mg/kg wet	3.333		60	30-130			
Acenaphthene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Acenaphthylene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Acetophenone	2.55	0.667	mg/kg wet	3.333		76	40-140			
Aniline	1.97	1.67	mg/kg wet	3.333		59	40-140			
Anthracene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Azobenzene	3.08	0.333	mg/kg wet	3.333		92	40-140			
Benzo(a)anthracene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzo(g,h,i)perylene	3.74	0.333	mg/kg wet	3.333		112	40-140			
Benzo(k)fluoranthene	3.14	0.333	mg/kg wet	3.333		94	40-140			
bis(2-Chloroethoxy)methane	2.64	0.333	mg/kg wet	3.333		79	40-140			
bis(2-Chloroethyl)ether	2.36	0.333	mg/kg wet	3.333		71	40-140			
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140			
bis(2-Ethylhexyl)phthalate	3.47	0.333	mg/kg wet	3.333		104	40-140			
Butylbenzylphthalate	3.25	0.333	mg/kg wet	3.333		98	40-140			
Chrysene	3.17	0.167	mg/kg wet	3.333		95	40-140			
Dibenzo(a,h)Anthracene	3.67	0.167	mg/kg wet	3.333		110	40-140			
Dibenzofuran	2.67	0.333	mg/kg wet	3.333		80	40-140			
Diethylphthalate	2.64	0.333	mg/kg wet	3.333		79	40-140			
Dimethylphthalate	2.78	0.333	mg/kg wet	3.333		83	40-140			
Di-n-butylphthalate	2.94	0.333	mg/kg wet	3.333		88	40-140			
Di-n-octylphthalate	3.29	0.333	mg/kg wet	3.333		99	40-140			
Fluoranthene	2.63	0.333	mg/kg wet	3.333		79	40-140			
Fluorene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Hexachlorobenzene	3.62	0.333	mg/kg wet	3.333		109	40-140			
Hexachlorobutadiene	3.20	0.333	mg/kg wet	3.333		96	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71407 - 3546										
Hexachloroethane	2.60	0.333	mg/kg wet	3.333		78	40-140			
Indeno(1,2,3-cd)Pyrene	3.63	0.333	mg/kg wet	3.333		109	40-140			
Isophorone	2.34	0.333	mg/kg wet	3.333		70	40-140			
Naphthalene	2.75	0.333	mg/kg wet	3.333		83	40-140			
Nitrobenzene	2.40	0.333	mg/kg wet	3.333		72	40-140			
N-Nitrosodimethylamine	1.80	0.333	mg/kg wet	3.333		54	40-140			
Pentachlorophenol	3.30	1.67	mg/kg wet	3.333		99	30-130			
Phenanthrene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Phenol	2.48	0.333	mg/kg wet	3.333		74	30-130			
Pyrene	3.18	0.333	mg/kg wet	3.333		95	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.40*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*5.16*		mg/kg wet	*5.000*		*103*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.78*		mg/kg wet	*5.000*		*76*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.83*		mg/kg wet	*3.333*		*85*	*30-130*			
Surrogate: 2-Fluorophenol	*3.23*		mg/kg wet	*5.000*		*65*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.54*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: Phenol-d6	*3.41*		mg/kg wet	*5.000*		*68*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.94*		mg/kg wet	*3.333*		*88*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.59	0.333	mg/kg wet	3.333		78	40-140	14	30	
1,2-Dichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	13	30	
1,3-Dichlorobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	13	30	
1,4-Dichlorobenzene	2.32	0.333	mg/kg wet	3.333		69	40-140	13	30	
2,4,5-Trichlorophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	11	30	
2,4,6-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130	13	30	
2,4-Dichlorophenol	2.59	0.333	mg/kg wet	3.333		78	30-130	16	30	
2,4-Dimethylphenol	2.36	0.333	mg/kg wet	3.333		71	30-130	13	30	
2,4-Dinitrophenol	2.96	1.67	mg/kg wet	3.333		89	30-130	4	30	
2,4-Dinitrotoluene	2.35	0.333	mg/kg wet	3.333		71	40-140	4	30	
2,6-Dinitrotoluene	2.37	0.333	mg/kg wet	3.333		71	40-140	11	30	
2-Chloronaphthalene	2.37	0.333	mg/kg wet	3.333		71	40-140	11	30	
2-Chlorophenol	2.26	0.333	mg/kg wet	3.333		68	30-130	13	30	
2-Methylnaphthalene	2.40	0.333	mg/kg wet	3.333		72	40-140	17	30	
2-Methylphenol	2.34	0.333	mg/kg wet	3.333		70	30-130	19	30	
2-Nitrophenol	2.65	0.333	mg/kg wet	3.333		79	30-130	14	30	
3,3´-Dichlorobenzidine	2.39	0.667	mg/kg wet	3.333		72	40-140	11	30	
3+4-Methylphenol	4.53	0.667	mg/kg wet	6.667		68	30-130	14	30	
4-Bromophenyl-phenylether	3.09	0.333	mg/kg wet	3.333		93	40-140	18	30	
4-Chloroaniline	1.60	0.667	mg/kg wet	3.333		48	40-140	5	30	
4-Nitrophenol	1.89	1.67	mg/kg wet	3.333		57	30-130	5	30	
Acenaphthene	2.52	0.333	mg/kg wet	3.333		76	40-140	12	30	
Acenaphthylene	2.39	0.333	mg/kg wet	3.333		72	40-140	13	30	
Acetophenone	2.26	0.667	mg/kg wet	3.333		68	40-140	12	30	
Aniline	1.73	1.67	mg/kg wet	3.333		52	40-140	13	30	
Anthracene	2.70	0.333	mg/kg wet	3.333		81	40-140	11	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71407 - 3546										
Azobenzene	2.54	0.333	mg/kg wet	3.333		76	40-140	19	30	
Benzo(a)anthracene	2.65	0.333	mg/kg wet	3.333		80	40-140	11	30	
Benzo(a)pyrene	2.82	0.167	mg/kg wet	3.333		85	40-140	9	30	
Benzo(b)fluoranthene	2.73	0.333	mg/kg wet	3.333		82	40-140	5	30	
Benzo(g,h,i)perylene	3.26	0.333	mg/kg wet	3.333		98	40-140	14	30	
Benzo(k)fluoranthene	2.84	0.333	mg/kg wet	3.333		85	40-140	10	30	
bis(2-Chloroethoxy)methane	2.28	0.333	mg/kg wet	3.333		68	40-140	15	30	
bis(2-Chloroethyl)ether	2.08	0.333	mg/kg wet	3.333		62	40-140	13	30	
bis(2-chloroisopropyl)Ether	2.21	0.333	mg/kg wet	3.333		66	40-140	15	30	
bis(2-Ethylhexyl)phthalate	3.20	0.333	mg/kg wet	3.333		96	40-140	8	30	
Butylbenzylphthalate	2.99	0.333	mg/kg wet	3.333		90	40-140	8	30	
Chrysene	2.85	0.167	mg/kg wet	3.333		85	40-140	11	30	
Dibenzo(a,h)Anthracene	3.23	0.167	mg/kg wet	3.333		97	40-140	13	30	
Dibenzofuran	2.37	0.333	mg/kg wet	3.333		71	40-140	12	30	
Diethylphthalate	2.39	0.333	mg/kg wet	3.333		72	40-140	10	30	
Dimethylphthalate	2.45	0.333	mg/kg wet	3.333		74	40-140	12	30	
Di-n-butylphthalate	2.82	0.333	mg/kg wet	3.333		85	40-140	4	30	
Di-n-octylphthalate	3.17	0.333	mg/kg wet	3.333		95	40-140	4	30	
Fluoranthene	2.58	0.333	mg/kg wet	3.333		77	40-140	2	30	
Fluorene	2.52	0.333	mg/kg wet	3.333		76	40-140	11	30	
Hexachlorobenzene	3.08	0.333	mg/kg wet	3.333		92	40-140	16	30	
Hexachlorobutadiene	2.78	0.333	mg/kg wet	3.333		83	40-140	14	30	
Hexachloroethane	2.27	0.333	mg/kg wet	3.333		68	40-140	13	30	
Indeno(1,2,3-cd)Pyrene	3.24	0.333	mg/kg wet	3.333		97	40-140	11	30	
Isophorone	2.01	0.333	mg/kg wet	3.333		60	40-140	15	30	
Naphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140	13	30	
Nitrobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	7	30	
N-Nitrosodimethylamine	1.54	0.333	mg/kg wet	3.333		46	40-140	16	30	
Pentachlorophenol	2.78	1.67	mg/kg wet	3.333		83	30-130	17	30	
Phenanthrene	2.62	0.333	mg/kg wet	3.333		78	40-140	12	30	
Phenol	2.06	0.333	mg/kg wet	3.333		62	30-130	19	30	
Pyrene	2.80	0.333	mg/kg wet	3.333		84	40-140	13	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.21*		mg/kg wet	*3.333*		*66*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.73*		mg/kg wet	*5.000*		*95*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.64*		mg/kg wet	*3.333*		*79*	*30-130*			
Surrogate: 2-Fluorophenol	*2.97*		mg/kg wet	*5.000*		*59*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.35*		mg/kg wet	*3.333*		*71*	*30-130*			
Surrogate: Phenol-d6	*3.17*		mg/kg wet	*5.000*		*63*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.87*		mg/kg wet	*3.333*		*86*	*30-130*			
Batch CL71507 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*1.91*		mg/kg wet	*3.333*		*57*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.18*		mg/kg wet	*5.000*		*64*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*2.93*		mg/kg wet	*5.000*		*59*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.02*		mg/kg wet	*3.333*		*60*	*30-130*			
Surrogate: 2-Fluorophenol	*2.61*		mg/kg wet	*5.000*		*52*	*30-130*			
Surrogate: Nitrobenzene-d5	*1.93*		mg/kg wet	*3.333*		*58*	*30-130*			
Surrogate: Phenol-d6	*2.77*		mg/kg wet	*5.000*		*55*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.98*		mg/kg wet	*3.333*		*89*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140			
1,2-Dichlorobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140			
1,3-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140			
1,4-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140			
2,4,5-Trichlorophenol	3.11	0.333	mg/kg wet	3.333		93	30-130			
2,4,6-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dichlorophenol	2.50	0.333	mg/kg wet	3.333		75	30-130			
2,4-Dimethylphenol	2.22	0.333	mg/kg wet	3.333		66	30-130			
2,4-Dinitrophenol	3.35	1.67	mg/kg wet	3.333		101	30-130			
2,4-Dinitrotoluene	3.04	0.333	mg/kg wet	3.333		91	40-140			
2,6-Dinitrotoluene	2.82	0.333	mg/kg wet	3.333		85	40-140			
2-Chloronaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Chlorophenol	2.02	0.333	mg/kg wet	3.333		61	30-130			
2-Methylnaphthalene	2.29	0.333	mg/kg wet	3.333		69	40-140			
2-Methylphenol	2.39	0.333	mg/kg wet	3.333		72	30-130			
2-Nitrophenol	2.34	0.333	mg/kg wet	3.333		70	30-130			
3,3´-Dichlorobenzidine	2.36	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.47	0.667	mg/kg wet	6.667		67	30-130			
4-Bromophenyl-phenylether	2.99	0.333	mg/kg wet	3.333		90	40-140			
4-Chloroaniline	1.89	0.667	mg/kg wet	3.333		57	40-140			
4-Nitrophenol	2.55	1.67	mg/kg wet	3.333		77	30-130			
Acenaphthene	2.53	0.333	mg/kg wet	3.333		76	40-140			
Acenaphthylene	2.38	0.333	mg/kg wet	3.333		72	40-140			
Acetophenone	2.06	0.667	mg/kg wet	3.333		62	40-140			
Aniline	1.61	1.67	mg/kg wet	3.333		48	40-140			
Anthracene	2.87	0.333	mg/kg wet	3.333		86	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
Azobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140			
Benzo(a)anthracene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Benzo(a)pyrene	2.83	0.167	mg/kg wet	3.333		85	40-140			
Benzo(b)fluoranthene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Benzo(g,h,i)perylene	3.21	0.333	mg/kg wet	3.333		96	40-140			
Benzo(k)fluoranthene	3.09	0.333	mg/kg wet	3.333		93	40-140			
bis(2-Chloroethoxy)methane	2.07	0.333	mg/kg wet	3.333		62	40-140			
bis(2-Chloroethyl)ether	1.82	0.333	mg/kg wet	3.333		55	40-140			
bis(2-chloroisopropyl)Ether	1.96	0.333	mg/kg wet	3.333		59	40-140			
bis(2-Ethylhexyl)phthalate	3.25	0.333	mg/kg wet	3.333		97	40-140			
Butylbenzylphthalate	3.01	0.333	mg/kg wet	3.333		90	40-140			
Chrysene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	3.12	0.167	mg/kg wet	3.333		93	40-140			
Dibenzofuran	2.53	0.333	mg/kg wet	3.333		76	40-140			
Diethylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140			
Dimethylphthalate	2.87	0.333	mg/kg wet	3.333		86	40-140			
Di-n-butylphthalate	3.16	0.333	mg/kg wet	3.333		95	40-140			
Di-n-octylphthalate	3.48	0.333	mg/kg wet	3.333		104	40-140			
Fluoranthene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Fluorene	2.95	0.333	mg/kg wet	3.333		88	40-140			
Hexachlorobenzene	3.04	0.333	mg/kg wet	3.333		91	40-140			
Hexachlorobutadiene	2.42	0.333	mg/kg wet	3.333		73	40-140			
Hexachloroethane	2.04	0.333	mg/kg wet	3.333		61	40-140			
Indeno(1,2,3-cd)Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	1.89	0.333	mg/kg wet	3.333		57	40-140			
Naphthalene	2.19	0.333	mg/kg wet	3.333		66	40-140			
Nitrobenzene	1.99	0.333	mg/kg wet	3.333		60	40-140			
N-Nitrosodimethylamine	1.48	0.333	mg/kg wet	3.333		45	40-140			
Pentachlorophenol	3.24	1.67	mg/kg wet	3.333		97	30-130			
Phenanthrene	2.78	0.333	mg/kg wet	3.333		84	40-140			
Phenol	1.93	0.333	mg/kg wet	3.333		58	30-130			
Pyrene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.10*		mg/kg wet	*3.333*		*63*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*5.00*		mg/kg wet	*5.000*		*100*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.29*		mg/kg wet	*5.000*		*66*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.42*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2-Fluorophenol	*2.92*		mg/kg wet	*5.000*		*58*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.20*		mg/kg wet	*3.333*		*66*	*30-130*			
Surrogate: Phenol-d6	*3.01*		mg/kg wet	*5.000*		*60*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.08*		mg/kg wet	*3.333*		*92*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	5	30	
1,2-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		67	40-140	5	30	
1,3-Dichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	5	30	
1,4-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		67	40-140	6	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
2,4,5-Trichlorophenol	3.17	0.333	mg/kg wet	3.333		95	30-130	2	30	
2,4,6-Trichlorophenol	3.04	0.333	mg/kg wet	3.333		91	30-130	3	30	
2,4-Dichlorophenol	2.66	0.333	mg/kg wet	3.333		80	30-130	6	30	
2,4-Dimethylphenol	2.41	0.333	mg/kg wet	3.333		72	30-130	9	30	
2,4-Dinitrophenol	3.59	1.67	mg/kg wet	3.333		108	30-130	7	30	
2,4-Dinitrotoluene	3.13	0.333	mg/kg wet	3.333		94	40-140	3	30	
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		87	40-140	2	30	
2-Chloronaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	6	30	
2-Chlorophenol	2.14	0.333	mg/kg wet	3.333		64	30-130	6	30	
2-Methylnaphthalene	2.43	0.333	mg/kg wet	3.333		73	40-140	6	30	
2-Methylphenol	2.38	0.333	mg/kg wet	3.333		72	30-130	0.3	30	
2-Nitrophenol	2.51	0.333	mg/kg wet	3.333		75	30-130	7	30	
3,3´-Dichlorobenzidine	2.25	0.667	mg/kg wet	3.333		68	40-140	5	30	
3+4-Methylphenol	4.77	0.667	mg/kg wet	6.667		72	30-130	7	30	
4-Bromophenyl-phenylether	3.01	0.333	mg/kg wet	3.333		90	40-140	0.6	30	
4-Chloroaniline	1.92	0.667	mg/kg wet	3.333		58	40-140	2	30	
4-Nitrophenol	2.71	1.67	mg/kg wet	3.333		81	30-130	6	30	
Acenaphthene	2.61	0.333	mg/kg wet	3.333		78	40-140	3	30	
Acenaphthylene	2.46	0.333	mg/kg wet	3.333		74	40-140	3	30	
Acetophenone	2.19	0.667	mg/kg wet	3.333		66	40-140	6	30	
Aniline	1.45	1.67	mg/kg wet	3.333		44	40-140	10	30	
Anthracene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Azobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	0.8	30	
Benzo(a)anthracene	2.71	0.333	mg/kg wet	3.333		81	40-140	2	30	
Benzo(a)pyrene	2.87	0.167	mg/kg wet	3.333		86	40-140	1	30	
Benzo(b)fluoranthene	2.91	0.333	mg/kg wet	3.333		87	40-140	5	30	
Benzo(g,h,i)perylene	3.21	0.333	mg/kg wet	3.333		96	40-140	0.06	30	
Benzo(k)fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140	5	30	
bis(2-Chloroethoxy)methane	2.17	0.333	mg/kg wet	3.333		65	40-140	5	30	
bis(2-Chloroethyl)ether	1.90	0.333	mg/kg wet	3.333		57	40-140	4	30	
bis(2-chloroisopropyl)Ether	2.05	0.333	mg/kg wet	3.333		61	40-140	5	30	
bis(2-Ethylhexyl)phthalate	3.31	0.333	mg/kg wet	3.333		99	40-140	2	30	
Butylbenzylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140	2	30	
Chrysene	2.97	0.167	mg/kg wet	3.333		89	40-140	3	30	
Dibenzo(a,h)Anthracene	3.10	0.167	mg/kg wet	3.333		93	40-140	0.4	30	
Dibenzofuran	2.58	0.333	mg/kg wet	3.333		77	40-140	2	30	
Diethylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140	3	30	
Dimethylphthalate	2.91	0.333	mg/kg wet	3.333		87	40-140	1	30	
Di-n-butylphthalate	3.17	0.333	mg/kg wet	3.333		95	40-140	0.1	30	
Di-n-octylphthalate	3.46	0.333	mg/kg wet	3.333		104	40-140	0.5	30	
Fluoranthene	3.13	0.333	mg/kg wet	3.333		94	40-140	2	30	
Fluorene	2.99	0.333	mg/kg wet	3.333		90	40-140	2	30	
Hexachlorobenzene	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Hexachlorobutadiene	2.50	0.333	mg/kg wet	3.333		75	40-140	3	30	
Hexachloroethane	2.16	0.333	mg/kg wet	3.333		65	40-140	6	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
Indeno(1,2,3-cd)Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140	0.1	30	
Isophorone	1.96	0.333	mg/kg wet	3.333		59	40-140	3	30	
Naphthalene	2.27	0.333	mg/kg wet	3.333		68	40-140	4	30	
Nitrobenzene	1.97	0.333	mg/kg wet	3.333		59	40-140	1	30	
N-Nitrosodimethylamine	1.51	0.333	mg/kg wet	3.333		45	40-140	2	30	
Pentachlorophenol	3.50	1.67	mg/kg wet	3.333		105	30-130	8	30	
Phenanthrene	2.82	0.333	mg/kg wet	3.333		85	40-140	1	30	
Phenol	2.04	0.333	mg/kg wet	3.333		61	30-130	5	30	
Pyrene	2.87	0.333	mg/kg wet	3.333		86	40-140	1	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.16*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.92*		mg/kg wet	*5.000*		*98*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.37*		mg/kg wet	*5.000*		*67*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.47*		mg/kg wet	*3.333*		*74*	*30-130*			
Surrogate: 2-Fluorophenol	*2.96*		mg/kg wet	*5.000*		*59*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.22*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: Phenol-d6	*3.12*		mg/kg wet	*5.000*		*62*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.03*		mg/kg wet	*3.333*		*91*	*30-130*			
Classical Chemistry										
Batch CL72151 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	100	mg/kg							
Total Organic Carbon (2)	ND	100	mg/kg							
Total Organic Carbon (Average)	ND	100	mg/kg dry wt							
LCS										
Total Organic Carbon (1)	11500	100	mg/kg	10000		115	80-120			
Total Organic Carbon (2)	11400	100	mg/kg	10000		114	80-120			
Total Organic Carbon (Average)	11400	100	mg/kg dry wt							
LCS Dup										
Total Organic Carbon (1)	9490	100	mg/kg	10000		95	80-120	19	200	
Total Organic Carbon (2)	10500	100	mg/kg	10000		105	80-120	8	200	
Total Organic Carbon (Average)	9970	100	mg/kg dry wt							
Reference										
Total Organic Carbon (Average)	1.50		mg/kg dry wt							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712347

Notes and Definitions

Z-09	ND
XH	Peaks found in the retention time window for MCPA did not confirm by GC/MS.
U	Analyte included in the analysis, but not detected
TR	RSD of replicate analysis >25%. Reanalysis produced similar results.
S+	Surrogate recovery(ies) above upper control limit (S+).
RRF	Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration
Q	Calibration required quadratic regression (Q).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
B+	Blank Spike recovery is above upper control limit (B+).
#	Modified result
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712347
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 7,9,10,11
    Analysis: Dioxin
    TAT: 5 day
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

Added 2oz to Samples 7,9,10,11, split samples for Sub work
ec 12/20/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	190932	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	190955	Yes	NA	Yes	VOA Vial - Other	Other	
01	190956	Yes	NA	Yes	VOA Vial - Other	Other	
01	190979	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	190980	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	190992	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	190931	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	190953	Yes	NA	Yes	VOA Vial - Other	Other	
02	190954	Yes	NA	Yes	VOA Vial - Other	Other	
02	190977	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	190978	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	190991	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	190930	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	190951	Yes	NA	Yes	VOA Vial - Other	Other	
03	190952	Yes	NA	Yes	VOA Vial - Other	Other	
03	190975	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	190976	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	190990	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	190929	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	190949	Yes	NA	Yes	VOA Vial - Other	Other	
04	190950	Yes	NA	Yes	VOA Vial - Other	Other	
04	190973	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	190974	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	190989	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712347

Date Received: 12/14/2017

05	190928	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	190947	Yes	NA	Yes	VOA Vial - Other	Other
05	190948	Yes	NA	Yes	VOA Vial - Other	Other
05	190971	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	190972	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	190988	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	190927	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	190945	Yes	NA	Yes	VOA Vial - Other	Other
06	190946	Yes	NA	Yes	VOA Vial - Other	Other
06	190969	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	190970	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	190987	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	190926	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	190943	Yes	NA	Yes	VOA Vial - Other	Other
07	190944	Yes	NA	Yes	VOA Vial - Other	Other
07	190967	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	190968	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	190986	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	192267	Yes	NA	Yes	2 oz. Jar - Unpres	NP
08	190925	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	190941	Yes	NA	Yes	VOA Vial - Other	Other
08	190942	Yes	NA	Yes	VOA Vial - Other	Other
08	190965	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	190966	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	190985	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	190924	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	190939	Yes	NA	Yes	VOA Vial - Other	Other
09	190940	Yes	NA	Yes	VOA Vial - Other	Other
09	190963	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	190964	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	190984	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	192266	Yes	NA	Yes	2 oz. Jar - Unpres	NP
10	190923	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	190937	Yes	NA	Yes	VOA Vial - Other	Other
10	190938	Yes	NA	Yes	VOA Vial - Other	Other
10	190961	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	190962	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	190983	Yes	NA	Yes	4 oz. Jar - Unpres	NP
10	192265	Yes	NA	Yes	2 oz. Jar - Unpres	NP
11	190922	Yes	NA	Yes	VOA Vial - Methanol	MeOH
11	190935	Yes	NA	Yes	VOA Vial - Other	Other
11	190936	Yes	NA	Yes	VOA Vial - Other	Other
11	190959	Yes	NA	Yes	8 oz. Jar - Unpres	NP
11	190960	Yes	NA	Yes	8 oz. Jar - Unpres	NP
11	190982	Yes	NA	Yes	4 oz. Jar - Unpres	NP
11	192264	Yes	NA	Yes	2 oz. Jar - Unpres	NP
12	190921	Yes	NA	Yes	VOA Vial - Methanol	MeOH
12	191059	Yes	NA	Yes	VOA Vial - Methanol	MeOH

2nd Review

Are barcode labels on correct containers? (Yes) No

Completed By: [signature] Date & Time: 12/20/17 1451

Reviewed By: [signature] Date & Time: 12/22/17 1520

Delivered By: [signature] 12/20/17 1521

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712347
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? (Yes) / No
    ESS Sample IDs: **1--11**
    Analysis: **Dioxin, Grain size, Classification, Moisture content**
    TAT: **5 day**
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 12/14/17 Time: 1820 By: [illegible]

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / (No)
    Who was contacted? ____ Date: ____ Time: ____ By: ____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	190932	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	190955	Yes	NA	Yes	VOA Vial - Other	Other	
01	190956	Yes	NA	Yes	VOA Vial - Other	Other	
01	190979	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	190980	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	190992	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	190931	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	190953	Yes	NA	Yes	VOA Vial - Other	Other	
02	190954	Yes	NA	Yes	VOA Vial - Other	Other	
02	190977	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	190978	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	190991	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	190930	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	190951	Yes	NA	Yes	VOA Vial - Other	Other	
03	190952	Yes	NA	Yes	VOA Vial - Other	Other	
03	190975	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	190976	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	190990	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	190929	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	190949	Yes	NA	Yes	VOA Vial - Other	Other	
04	190950	Yes	NA	Yes	VOA Vial - Other	Other	
04	190973	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	190974	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	190989	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712347

Date Received: 12/14/2017

05	190928	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	190947	Yes	NA	Yes	VOA Vial - Other	Other
05	190948	Yes	NA	Yes	VOA Vial - Other	Other
05	190971	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	190972	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	190988	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	190927	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	190945	Yes	NA	Yes	VOA Vial - Other	Other
06	190946	Yes	NA	Yes	VOA Vial - Other	Other
06	190969	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	190970	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	190987	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	190926	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	190943	Yes	NA	Yes	VOA Vial - Other	Other
07	190944	Yes	NA	Yes	VOA Vial - Other	Other
07	190967	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	190968	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	190986	Yes	NA	Yes	4 oz. Jar - Unpres	NP
08	190925	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	190941	Yes	NA	Yes	VOA Vial - Other	Other
08	190942	Yes	NA	Yes	VOA Vial - Other	Other
08	190965	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	190966	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	190985	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	190924	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	190939	Yes	NA	Yes	VOA Vial - Other	Other
09	190940	Yes	NA	Yes	VOA Vial - Other	Other
09	190963	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	190964	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	190984	Yes	NA	Yes	4 oz. Jar - Unpres	NP
10	190923	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	190937	Yes	NA	Yes	VOA Vial - Other	Other
10	190938	Yes	NA	Yes	VOA Vial - Other	Other
10	190961	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	190962	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	190983	Yes	NA	Yes	4 oz. Jar - Unpres	NP
11	190922	Yes	NA	Yes	VOA Vial - Methanol	MeOH
11	190935	Yes	NA	Yes	VOA Vial - Other	Other
11	190936	Yes	NA	Yes	VOA Vial - Other	Other
11	190959	Yes	NA	Yes	8 oz. Jar - Unpres	NP
11	190960	Yes	NA	Yes	8 oz. Jar - Unpres	NP
11	190982	Yes	NA	Yes	4 oz. Jar - Unpres	NP
12	190921	Yes	NA	Yes	VOA Vial - Methanol	MeOH
12	191059	Yes	NA	Yes	VOA Vial - Methanol	MeOH

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/14/17 1735

Reviewed By: _____ Date & Time: 12/14/17 1817

Delivered By: _____ 12/14/17 1817

Changes made 12/15/17 - ML

ESS Laboratory

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www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab #	1712347
Turn Time	5-Day Rush
Regulatory State	
Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
Reporting Limits	S-1
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

	ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
1	01 11	12/14/17	10:10 AM	Grab	Soil	Type C - Capping Sand - 019	X	X	X	X	X	X	X	X	X	X	X
2	02 12	12/14/17	10:15 AM	Grab	Soil	Type C - Capping Sand - 020	X	X	X	X	X	X	X	X	X	X	X
3	03 13	12/14/17	10:20 AM	Grab	Soil	Type C - Capping Sand - 021	X	X	X	X	X	X	X	X	X	X	X
4	04 14	12/14/17	10:25 AM	Grab	Soil	Type C - Capping Sand - 022	X	X	X	X	X	X	X	X	X	X	X
5	05 15	12/14/17	10:30 AM	Grab	Soil	Type C - Capping Sand - 023	X	X	X	X	X	X	X	X	X	X	X
6	06 16	12/14/17	10:35 AM	Grab	Soil	Type C - Capping Sand - 024	X	X	X	X	X	X	X	X	X	X	X
7	07 17	12/14/17	10:40 AM	Grab	Soil	Type C - Capping Sand - 025	X	X	X	X	X	X	X	X	X	X	X
8	08 18	12/14/17	10:45 AM	Grab	Soil	Type B - Capping Sand - 001	X	X	X	X	X	X	X	X	X	X	X
9	09 19	12/14/17	10:50 AM	Grab	Soil	Type B - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
10	10 20	12/14/17	10:55 AM	Grab	Soil	Type B - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:
Seals Intact: Tim 12 3.3
Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: Please specify "Other" preservative and containers types in this space

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st. Then, proceed analytical & gradation B & C

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
12/14	JByrne 12/14/17 12pm	JByrne 12/14/17 15:34	12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton SPS			

Changes made 12/15/17 - ML

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www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1712347

Turn Time: 5-Day Rush
Regulatory State
Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits: S-1
Electonic Deliverables: ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

	ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
11	01 ~~01~~	12/14/17	11:00 AM	Grab	Soil	Type B - Capping Sand - 004	X	X	X	X	X	X	X	X	~~X~~	~~X~~	~~X~~
12	02 ~~02~~	12/14/17		Grab	Soil	TB Vials											

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
Number of Containers per Sample:

Laboratory Use Only
Cooler Present:
Seals Intact: Tim ice 3.3
Cooler Temperature: °C

Sampled by : Aggregate Industries QC
Comments: Please specify "Other" preservative and containers types in this space
Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then proceed analytical & gradation B&C.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
12/14	12/14/17 12pm	12/14/17 15:34	12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Walton SPS			

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CHAIN OF CUSTODY

ESS Lab #	1712347
Turn Time	5-Day Rush
Reporting Limits	S-1
Regulatory State	
Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
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Analysis

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1	01 11	12/14/17	10:10 AM	Grab	Soil	Type C - Capping Sand - 019	X	X	X	X	X	X	X	X	X	X	X
2	02 12	12/14/17	10:15 AM	Grab	Soil	Type C - Capping Sand - 020	X	X	X	X	X	X	X	X	X	X	X
3	03 13	12/14/17	10:20 AM	Grab	Soil	Type C - Capping Sand - 021	X	X	X	X	X	X	X	X	X	X	X
4	04 14	12/14/17	10:25 AM	Grab	Soil	Type C - Capping Sand - 022	X	X	X	X	X	X	X	X	X	X	X
5	05 15	12/14/17	10:30 AM	Grab	Soil	Type C - Capping Sand - 023	X	X	X	X	X	X	X	X	X	X	X
6	06 16	12/14/17	10:35 AM	Grab	Soil	Type C - Capping Sand - 024	X	X	X	X	X	X	X	X	X	X	X
7	07 17	12/14/17	10:40 AM	Grab	Soil	Type C - Capping Sand - 025	X	X	X	X	X	X	X	X	X	X	X
8	08 18	12/14/17	10:45 AM	Grab	Soil	Type B - Capping Sand - 001	X	X	X	X	X	X	X	X	X	X	X
9	09 19	12/14/17	10:50 AM	Grab	Soil	Type B - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
10	10 20	12/14/17	10:55 AM	Grab	Soil	Type B - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim 12 3.3

Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Gradation on A 1st. Then, proceed analytical & gradation B & C

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[illegible] 12/14	J Byrne 12/14/17 12pm	J Byrne 12/14/17 15:34	[illegible] 12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton SPS			

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CHAIN OF CUSTODY

ESS Lab #	1712347
Turn Time	5-Day Rush
Reporting Limits	S-1
Regulatory State	
Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
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Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

	ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
11	01 21	12/14/17	11:00 AM	Grab	Soil	Type B - Capping Sand - 004	X	X	X	X	X	X	X	X	X	X	X
12	02 22	12/14/17		Grab	Soil	TB Vials											

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim ice 3.3

Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then proceed analytical & gradation B&C.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
12/14	12/14/17 12pm	12/14/17 15:34	12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Walton SPS			

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1712347

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 11:26 am, Dec 29, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses
Pace Analytical - Minneapolis, MN Dioxin

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

SAMPLE RECEIPT

The following samples were received on December 14, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Low Level VOA vials were frozen by ESS Laboratory on December 14, 2017 at 18:20.

Lab Number	Sample Name	Matrix	Analysis
1712347-01	Type C - Capping Sand - 019	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-02	Type C - Capping Sand - 020	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-03	Type C - Capping Sand - 021	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-04	Type C - Capping Sand - 022	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-05	Type C - Capping Sand - 023	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-06	Type C - Capping Sand - 024	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-07	Type C - Capping Sand - 025	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-08	Type B - Capping Sand - 001	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-09	Type B - Capping Sand - 002	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-10	Type B - Capping Sand - 003	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060
1712347-11	Type B - Capping Sand - 004	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712347

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

1712347-09	**Surrogate recovery(ies) above upper control limit (S+).**
	1,2-Dichloroethane-d4 (133% @ 70-130%)
1712347-10	**Surrogate recovery(ies) above upper control limit (S+).**
	1,2-Dichloroethane-d4 (134% @ 70-130%)
1712347-11	**Surrogate recovery(ies) above upper control limit (S+).**
	1,2-Dichloroethane-d4 (131% @ 70-130%)
C7L0260-CCV1	**Continuing Calibration %Diff/Drift is above control limit (CD+).**
	1,1,1-Trichloroethane (21% @ 20%), 2,2-Dichloropropane (21% @ 20%), Bromodichloromethane (26% @ 20%)
C7L0260-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	Naphthalene (22% @ 20%), Tetrahydrofuran (24% @ 20%)
C7L0261-CCV1	**Continuing Calibration %Diff/Drift is above control limit (CD+).**
	2,2-Dichloropropane (21% @ 20%)
C7L0261-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	1,4-Dioxane (23% @ 20%), Tetrahydrofuran (23% @ 20%)
CL71816-BS1	**Blank Spike recovery is above upper control limit (B+).**
	Bromomethane (134% @ 70-130%)

8151A Chlorinated Herbicides

1712347-08	**Modified result**
	MCPA , MCPA [2C]
1712347-08	**Peaks found in the retention time window for MCPA did not confirm by GC/MS.**

8270D Semi-Volatile Organic Compounds

C7L0207-CCV1	**Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
	2,4-Dinitrotoluene (96% @ 80-120%), 2,6-Dinitrotoluene (96% @ 80-120%)
C7L0207-CCV1	**Calibration required quadratic regression (Q).**
	2,4-Dinitrophenol (110% @ 80-120%), Pentachlorophenol (102% @ 80-120%)
C7L0207-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	N-Nitrosodimethylamine (30% @ 20%)
C7L0229-CCV1	**Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
	2,4-Dinitrotoluene (100% @ 80-120%), 2,6-Dinitrotoluene (99% @ 80-120%)
C7L0229-CCV1	**Calibration required quadratic regression (Q).**
	2,4-Dinitrophenol (113% @ 80-120%), Pentachlorophenol (96% @ 80-120%)
C7L0229-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	N-Nitrosodimethylamine (32% @ 20%)
C7L0275-CCV1	**Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
	2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (100% @ 80-120%)
C7L0275-CCV1	**Calibration required quadratic regression (Q).**
	2,4-Dinitrophenol (142% @ 80-120%), Pentachlorophenol (103% @ 80-120%)
C7L0275-CCV1	**Continuing Calibration %Diff/Drift is above control limit (CD+).**

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1712347

2,4-Dinitrophenol (42% @ 20%)

C7L0275-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
bis(2-Chloroethyl)ether (24% @ 20%), N-Nitrosodimethylamine (21% @ 20%), Phenol-d6 (21% @ 20%)

C7L0304-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (103% @ 80-120%)

C7L0304-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (119% @ 80-120%), Pentachlorophenol (111% @ 80-120%)

C7L0304-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (22% @ 20%), N-Nitrosodimethylamine (21% @ 20%)

Classical Chemistry

1712347-03 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

1712347-05 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

1712347-07 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

Total Metals

CL71841-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Barium (21% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1712347-01 through 1712347-11**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

(X) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	(X) 8082 PCB CAM V A	( ) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV B	(X) 8081 Pesticides CAM V C	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	( ) MassDEP EPH CAM IV B	(X) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	Data User Note: ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes (X) No ( )*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard
Date: December 28, 2017
Printed Name: Laurel Stoddard
Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.48)		6020A		20	NAR	12/19/17 15:37	2.2	100	CL71841
Arsenic	**11.0** (2.42)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Barium	**22.1** (2.42)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Beryllium	**0.47** (0.11)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Cadmium	ND (0.48)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Chromium	**48.8** (0.97)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Lead	**24.9** (4.84)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Mercury	ND (0.030)		7471B		1	MJV	12/19/17 13:27	0.71	40	CL71842
Nickel	**22.3** (2.42)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Selenium	ND (0.48)		6020A		20	NAR	12/19/17 15:37	2.2	100	CL71841
Silver	ND (0.48)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Thallium	**0.51** (0.48)		6020A		20	NAR	12/19/17 15:37	2.2	100	CL71841
Vanadium	**15.9** (0.97)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841
Zinc	**28.0** (2.42)		6010C		1	KJK	12/20/17 2:25	2.2	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0017)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
1,4-Dioxane	ND (0.0872)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
2-Butanone	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
2-Chlorotoluene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
2-Hexanone	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
4-Chlorotoluene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Acetone	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Benzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Bromobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Bromochloromethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Bromoform	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Bromomethane	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Carbon Disulfide	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Chlorobenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Chloroethane	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Chloroform	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Chloromethane	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Dibromochloromethane	ND (0.0017)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Dibromomethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Diethyl Ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Di-isopropyl ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Ethylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Isopropylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Methylene Chloride	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Naphthalene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
n-Butylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
n-Propylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
sec-Butylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Styrene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
tert-Butylbenzene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Tetrachloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Tetrahydrofuran	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Toluene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Trichloroethene	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Vinyl Chloride	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Xylene O	ND (0.0044)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Xylene P,M	ND (0.0087)		8260B Low		1	12/17/17 22:35	C7L0260	CL71815
Xylenes (Total)	ND (0.0087)		8260B Low		1	12/17/17 22:35		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*126 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*118 %*		*70-130*
Surrogate: Toluene-d8	*95 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
4,4´-DDE	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
4,4´-DDT	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Aldrin	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
alpha-BHC	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
alpha-Chlordane	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
beta-BHC	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Chlordane (Total)	ND (0.0216)		8081B		1	12/15/17 23:51	C7L0248	CL71508
delta-BHC	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Dieldrin	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endosulfan I	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endosulfan II	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endrin	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Endrin Ketone	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/15/17 23:51	C7L0248	CL71508
gamma-Chlordane	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Heptachlor	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Hexachlorobenzene	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508
Methoxychlor	ND (0.0027)		8081B		1	12/15/17 23:51	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*108 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 14:51		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 14:51		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*88 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/19/17 23:19	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/19/17 23:19	C7L0277	CL71801
2,4-D	ND (0.050)		8151A		1	12/19/17 23:19	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/19/17 23:19	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/19/17 23:19	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/19/17 23:19	C7L0277	CL71801
Dichlorprop	ND (0.050)		8151A		1	12/19/17 23:19	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/19/17 23:19	C7L0277	CL71801
MCPA	ND (2.45)		8151A		1	12/19/17 23:19	C7L0277	CL71801
MCPP	ND (2.48)		8151A		1	12/19/17 23:19	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*77 %*		*30-150*
Surrogate: DCAA [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
1,2-Dichlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
1,3-Dichlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
1,4-Dichlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4,5-Trichlorophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4,6-Trichlorophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4-Dichlorophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4-Dimethylphenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4-Dinitrophenol	ND (1.88)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,4-Dinitrotoluene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2,6-Dinitrotoluene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Chloronaphthalene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Chlorophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Methylnaphthalene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Methylphenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
2-Nitrophenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
3,3′-Dichlorobenzidine	ND (0.750)		8270D		1	12/19/17 22:24	C7L0275	CL71407
3+4-Methylphenol	ND (0.750)		8270D		1	12/19/17 22:24	C7L0275	CL71407
4-Bromophenyl-phenylether	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
4-Chloroaniline	ND (0.750)		8270D		1	12/19/17 22:24	C7L0275	CL71407
4-Nitrophenol	ND (1.88)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Acenaphthene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Acenaphthylene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Acetophenone	ND (0.750)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Aniline	ND (1.88)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Anthracene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Azobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(a)anthracene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(a)pyrene	ND (0.188)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(b)fluoranthene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(g,h,i)perylene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Benzo(k)fluoranthene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
bis(2-Chloroethyl)ether	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
bis(2-chloroisopropyl)Ether	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
bis(2-Ethylhexyl)phthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Butylbenzylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Chrysene	ND (0.188)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Dibenzo(a,h)Anthracene	ND (0.188)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Dibenzofuran	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Diethylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Dimethylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Di-n-butylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Di-n-octylphthalate	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Fluoranthene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Fluorene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Hexachlorobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Hexachlorobutadiene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Hexachloroethane	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Indeno(1,2,3-cd)Pyrene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Isophorone	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Naphthalene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Nitrobenzene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
N-Nitrosodimethylamine	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Pentachlorophenol	ND (1.88)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Phenanthrene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Phenol	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407
Pyrene	ND (0.374)		8270D		1	12/19/17 22:24	C7L0275	CL71407

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*69 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*83 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*64 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*67 %*		*30-130*				
Surrogate: Phenol-d6		*62 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*75 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (100)		9060		1	DEL	12/22/17 18:00	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.48)		6020A		20	NAR	12/19/17 15:42	2.23	100	CL71841
Arsenic	**5.93** (2.39)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Barium	**16.7** (2.39)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Beryllium	**0.44** (0.11)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Cadmium	ND (0.48)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Chromium	**44.1** (0.96)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Lead	**20.4** (4.78)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Mercury	ND (0.025)		7471B		1	MJV	12/19/17 13:33	0.85	40	CL71842
Nickel	**22.1** (2.39)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Selenium	ND (0.48)		6020A		20	NAR	12/19/17 15:42	2.23	100	CL71841
Silver	ND (0.48)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Thallium	**0.61** (0.48)		6020A		20	NAR	12/19/17 15:42	2.23	100	CL71841
Vanadium	**16.5** (0.96)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841
Zinc	**28.1** (2.39)		6010C		1	KJK	12/20/17 2:29	2.23	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0020)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
1,4-Dioxane	ND (0.101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
2-Butanone	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
2-Chlorotoluene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
2-Hexanone	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
4-Chlorotoluene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Acetone	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Benzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Bromobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Bromochloromethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Bromoform	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Bromomethane	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Carbon Disulfide	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Chlorobenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Chloroethane	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Chloroform	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Chloromethane	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Dibromochloromethane	ND (0.0020)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Dibromomethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Diethyl Ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Di-isopropyl ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Ethylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Isopropylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Methylene Chloride	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Naphthalene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
n-Butylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
n-Propylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
sec-Butylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Styrene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
tert-Butylbenzene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Tetrachloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Tetrahydrofuran	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Toluene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Trichloroethene	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Vinyl Chloride	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Xylene O	ND (0.0050)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Xylene P,M	ND (0.0101)		8260B Low		1	12/17/17 23:00	C7L0260	CL71815
Xylenes (Total)	ND (0.0101)		8260B Low		1	12/17/17 23:00		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*127 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*118 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
4,4´-DDE	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
4,4´-DDT	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Aldrin	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
alpha-BHC	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
alpha-Chlordane	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
beta-BHC	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Chlordane (Total)	ND (0.0221)		8081B		1	12/16/17 1:19	C7L0248	CL71508
delta-BHC	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Dieldrin	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endosulfan I	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endosulfan II	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endrin	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Endrin Ketone	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 1:19	C7L0248	CL71508
gamma-Chlordane	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Heptachlor	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Hexachlorobenzene [2C]	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508
Methoxychlor	ND (0.0028)		8081B		1	12/16/17 1:19	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*100 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*115 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 15:11		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 15:11		CL71502

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*86 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/19/17 23:51	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/19/17 23:51	C7L0277	CL71801
2,4-D	ND (0.050)		8151A		1	12/19/17 23:51	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/19/17 23:51	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/19/17 23:51	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/19/17 23:51	C7L0277	CL71801
Dichlorprop	ND (0.050)		8151A		1	12/19/17 23:51	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/19/17 23:51	C7L0277	CL71801
MCPA	ND (2.45)		8151A		1	12/19/17 23:51	C7L0277	CL71801
MCPP	ND (2.48)		8151A		1	12/19/17 23:51	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*82 %*		*30-150*
Surrogate: DCAA [2C]	*87 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
1,2-Dichlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
1,3-Dichlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
1,4-Dichlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4,5-Trichlorophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4,6-Trichlorophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4-Dichlorophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4-Dimethylphenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4-Dinitrophenol	ND (1.87)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,4-Dinitrotoluene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2,6-Dinitrotoluene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Chloronaphthalene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Chlorophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Methylnaphthalene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Methylphenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
2-Nitrophenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
3,3′-Dichlorobenzidine	ND (0.746)		8270D		1	12/19/17 22:59	C7L0275	CL71407
3+4-Methylphenol	ND (0.746)		8270D		1	12/19/17 22:59	C7L0275	CL71407
4-Bromophenyl-phenylether	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
4-Chloroaniline	ND (0.746)		8270D		1	12/19/17 22:59	C7L0275	CL71407
4-Nitrophenol	ND (1.87)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Acenaphthene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Acenaphthylene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Acetophenone	ND (0.746)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Aniline	ND (1.87)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Anthracene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Azobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(a)anthracene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(a)pyrene	ND (0.187)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(b)fluoranthene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(g,h,i)perylene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Benzo(k)fluoranthene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
bis(2-Chloroethyl)ether	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
bis(2-chloroisopropyl)Ether	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
bis(2-Ethylhexyl)phthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Butylbenzylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Chrysene	ND (0.187)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Dibenzo(a,h)Anthracene	ND (0.187)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Dibenzofuran	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Diethylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Dimethylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Di-n-butylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Di-n-octylphthalate	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Fluoranthene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Fluorene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Hexachlorobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Hexachlorobutadiene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Hexachloroethane	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Indeno(1,2,3-cd)Pyrene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Isophorone	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Naphthalene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Nitrobenzene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
N-Nitrosodimethylamine	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Pentachlorophenol	ND (1.87)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Phenanthrene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Phenol	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407
Pyrene	ND (0.372)		8270D		1	12/19/17 22:59	C7L0275	CL71407

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*81 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*69 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*62 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*65 %*		*30-130*				
Surrogate: Phenol-d6		*61 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*75 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	ND (100)		9060		1	DEL	12/22/17 1:47	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.51)		6020A		20	NAR	12/19/17 15:48	2.1	100	CL71841
Arsenic	**9.90** (2.55)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Barium	**27.5** (2.55)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Beryllium	**0.48** (0.11)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Cadmium	ND (0.51)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Chromium	**54.2** (1.02)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Lead	**23.9** (5.11)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Mercury	ND (0.033)		7471B		1	MJV	12/19/17 13:35	0.65	40	CL71842
Nickel	**24.3** (2.55)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Selenium	ND (0.51)		6020A		20	NAR	12/19/17 15:48	2.1	100	CL71841
Silver	ND (0.51)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Thallium	**0.51** (0.51)		6020A		20	NAR	12/19/17 15:48	2.1	100	CL71841
Vanadium	**16.6** (1.02)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841
Zinc	**27.1** (2.55)		6010C		1	KJK	12/20/17 2:36	2.1	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
1,4-Dioxane	ND (0.0894)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
2-Butanone	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
2-Chlorotoluene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
2-Hexanone	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
4-Chlorotoluene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Acetone	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Benzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Bromobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Bromochloromethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Bromoform	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Bromomethane	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Carbon Disulfide	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Chlorobenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Chloroethane	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Chloroform	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Chloromethane	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Dibromomethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Diethyl Ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Di-isopropyl ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Ethylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Isopropylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Methylene Chloride	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Naphthalene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
n-Butylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
n-Propylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
sec-Butylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Styrene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
tert-Butylbenzene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Tetrachloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Tetrahydrofuran	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Toluene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Trichloroethene	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Vinyl Chloride	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Xylene O	ND (0.0045)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Xylene P,M	ND (0.0089)		8260B Low		1	12/17/17 23:25	C7L0260	CL71815
Xylenes (Total)	ND (0.0089)		8260B Low		1	12/17/17 23:25		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
4,4´-DDE	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
4,4´-DDT	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Aldrin	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
alpha-BHC	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
alpha-Chlordane	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
beta-BHC	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Chlordane (Total)	ND (0.0219)		8081B		1	12/16/17 1:49	C7L0248	CL71508
delta-BHC	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Dieldrin	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endosulfan I	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endosulfan II	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endrin	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Endrin Ketone	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/16/17 1:49	C7L0248	CL71508
gamma-Chlordane	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Heptachlor	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Hexachlorobenzene	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508
Methoxychlor	ND (0.0027)		8081B		1	12/16/17 1:49	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 15:30		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 15:30		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*88 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*91 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 0:23	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 0:23	C7L0277	CL71801
2,4-D	ND (0.049)		8151A		1	12/20/17 0:23	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/20/17 0:23	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/20/17 0:23	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 0:23	C7L0277	CL71801
Dichlorprop	ND (0.049)		8151A		1	12/20/17 0:23	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/20/17 0:23	C7L0277	CL71801
MCPA	ND (2.44)		8151A		1	12/20/17 0:23	C7L0277	CL71801
MCPP	ND (2.47)		8151A		1	12/20/17 0:23	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*93 %*		*30-150*
Surrogate: DCAA [2C]	*102 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.84)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Chloronaphthalene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Chlorophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Methylnaphthalene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Methylphenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
2-Nitrophenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.735)		8270D		1	12/19/17 23:33	C7L0275	CL71507
3+4-Methylphenol	ND (0.735)		8270D		1	12/19/17 23:33	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
4-Chloroaniline	ND (0.735)		8270D		1	12/19/17 23:33	C7L0275	CL71507
4-Nitrophenol	ND (1.84)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Acenaphthene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Acenaphthylene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Acetophenone	ND (0.735)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Aniline	ND (1.84)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Anthracene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Azobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(a)anthracene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(a)pyrene	ND (0.184)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Butylbenzylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Chrysene	ND (0.184)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.184)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Dibenzofuran	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Diethylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Dimethylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Di-n-butylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Di-n-octylphthalate	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Fluoranthene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Fluorene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Hexachlorobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Hexachlorobutadiene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Hexachloroethane	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Isophorone	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Naphthalene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Nitrobenzene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Pentachlorophenol	ND (1.84)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Phenanthrene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Phenol	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507
Pyrene	ND (0.367)		8270D		1	12/19/17 23:33	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*86 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*82 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*65 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*70 %*		*30-130*				
Surrogate: Phenol-d6		*63 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*74 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**TR 5400** (100)		9060		1	DEL	12/22/17 18:50	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.50)		6020A		20	NAR	12/19/17 15:54	2.18	100	CL71841
Arsenic	**15.6** (2.48)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Barium	**22.0** (2.48)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Beryllium	**0.48** (0.11)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Cadmium	ND (0.50)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Chromium	**47.5** (0.99)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Lead	**24.2** (4.95)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Mercury	ND (0.032)		7471B		1	MJV	12/19/17 13:37	0.66	40	CL71842
Nickel	**25.4** (2.48)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Selenium	ND (0.50)		6020A		20	NAR	12/19/17 15:54	2.18	100	CL71841
Silver	ND (0.50)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Thallium	ND (0.50)		6020A		20	NAR	12/19/17 15:54	2.18	100	CL71841
Vanadium	**14.9** (0.99)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841
Zinc	**28.0** (2.48)		6010C		1	KJK	12/20/17 2:45	2.18	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0021)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
1,4-Dioxane	ND (0.106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
2-Butanone	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
2-Chlorotoluene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
2-Hexanone	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
4-Chlorotoluene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Acetone	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Benzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Bromobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Bromochloromethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Bromoform	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Bromomethane	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Carbon Disulfide	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Chlorobenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Chloroethane	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Chloroform	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Chloromethane	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Dibromochloromethane	ND (0.0021)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Dibromomethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Diethyl Ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Di-isopropyl ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Ethylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Isopropylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Methylene Chloride	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Naphthalene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
n-Butylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
n-Propylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
sec-Butylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Styrene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
tert-Butylbenzene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Tetrachloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Tetrahydrofuran	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Toluene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Trichloroethene	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Vinyl Chloride	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Xylene O	ND (0.0053)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Xylene P,M	ND (0.0106)		8260B Low		1	12/17/17 23:51	C7L0260	CL71815
Xylenes (Total)	ND (0.0106)		8260B Low		1	12/17/17 23:51		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
4,4´-DDE	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
4,4´-DDT	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Aldrin	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
alpha-BHC	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
alpha-Chlordane	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
beta-BHC	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Chlordane (Total)	ND (0.0220)		8081B		1	12/16/17 2:18	C7L0248	CL71508
delta-BHC	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Dieldrin	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endosulfan I	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endosulfan II	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endrin	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Endrin Ketone	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 2:18	C7L0248	CL71508
gamma-Chlordane	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Heptachlor	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Hexachlorobenzene [2C]	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508
Methoxychlor	ND (0.0028)		8081B		1	12/16/17 2:18	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*93 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*106 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 15:55		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 15:55		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*86 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*57 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 0:56	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 0:56	C7L0277	CL71801
2,4-D	ND (0.050)		8151A		1	12/20/17 0:56	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/20/17 0:56	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/20/17 0:56	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 0:56	C7L0277	CL71801
Dichlorprop	ND (0.050)		8151A		1	12/20/17 0:56	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/20/17 0:56	C7L0277	CL71801
MCPA	ND (2.46)		8151A		1	12/20/17 0:56	C7L0277	CL71801
MCPP	ND (2.49)		8151A		1	12/20/17 0:56	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*89 %*		*30-150*
Surrogate: DCAA [2C]	*101 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.89)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Chloronaphthalene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Chlorophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Methylnaphthalene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Methylphenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
2-Nitrophenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.755)		8270D		1	12/20/17 0:07	C7L0275	CL71507
3+4-Methylphenol	ND (0.755)		8270D		1	12/20/17 0:07	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
4-Chloroaniline	ND (0.755)		8270D		1	12/20/17 0:07	C7L0275	CL71507
4-Nitrophenol	ND (1.89)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Acenaphthene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Acenaphthylene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Acetophenone	ND (0.755)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Aniline	ND (1.89)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Anthracene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Azobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(a)anthracene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(a)pyrene	ND (0.189)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Butylbenzylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Chrysene	ND (0.189)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.189)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Dibenzofuran	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Diethylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Dimethylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Di-n-butylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Di-n-octylphthalate	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Fluoranthene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Fluorene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Hexachlorobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Hexachlorobutadiene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Hexachloroethane	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Isophorone	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Naphthalene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Nitrobenzene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Pentachlorophenol	ND (1.89)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Phenanthrene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Phenol	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507
Pyrene	ND (0.377)		8270D		1	12/20/17 0:07	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*84 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*75 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*62 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*65 %*		*30-130*				
Surrogate: Phenol-d6		*62 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*72 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**777** (100)		9060		1	DEL	12/22/17 2:54	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.54)		6020A		20	NAR	12/19/17 16:00	2.05	100	CL71841
Arsenic	**12.8** (2.70)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Barium	**26.5** (2.70)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Beryllium	**0.49** (0.12)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Cadmium	ND (0.54)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Chromium	**52.7** (1.08)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Lead	**26.4** (5.41)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Mercury	ND (0.034)		7471B		1	MJV	12/19/17 13:39	0.65	40	CL71842
Nickel	**23.2** (2.70)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Selenium	ND (0.54)		6020A		20	NAR	12/19/17 16:00	2.05	100	CL71841
Silver	ND (0.54)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Thallium	ND (0.54)		6020A		20	NAR	12/19/17 16:00	2.05	100	CL71841
Vanadium	**16.7** (1.08)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841
Zinc	**28.6** (2.70)		6010C		1	KJK	12/20/17 2:49	2.05	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0018)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
1,4-Dioxane	ND (0.0909)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
2-Butanone	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
2-Chlorotoluene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
2-Hexanone	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
4-Chlorotoluene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Acetone	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Benzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Bromobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Bromochloromethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Bromoform	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Bromomethane	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Carbon Disulfide	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Chlorobenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Chloroethane	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Chloroform	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Chloromethane	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Dibromochloromethane	ND (0.0018)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Dibromomethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Diethyl Ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Di-isopropyl ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Ethylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Isopropylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Methylene Chloride	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Naphthalene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
n-Butylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
n-Propylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
sec-Butylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Styrene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
tert-Butylbenzene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Tetrachloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Tetrahydrofuran	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Toluene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Trichloroethene	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Vinyl Chloride	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Xylene O	ND (0.0045)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Xylene P,M	ND (0.0091)		8260B Low		1	12/18/17 0:16	C7L0260	CL71815
Xylenes (Total)	ND (0.0091)		8260B Low		1	12/18/17 0:16		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*125 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
4,4´-DDE	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
4,4´-DDT	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Aldrin	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
alpha-BHC	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
alpha-Chlordane	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
beta-BHC	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Chlordane (Total)	ND (0.0231)		8081B		1	12/16/17 2:47	C7L0248	CL71508
delta-BHC	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Dieldrin	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endosulfan I	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endosulfan II	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endrin	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Endrin Ketone	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 2:47	C7L0248	CL71508
gamma-Chlordane	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Heptachlor	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Hexachlorobenzene	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508
Methoxychlor	ND (0.0029)		8081B		1	12/16/17 2:47	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*107 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 16:12		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 16:12		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*93 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*64 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 1:28	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 1:28	C7L0277	CL71801
2,4-D	ND (0.051)		8151A		1	12/20/17 1:28	C7L0277	CL71801
2,4-DB	ND (0.052)		8151A		1	12/20/17 1:28	C7L0277	CL71801
Dalapon	ND (0.049)		8151A		1	12/20/17 1:28	C7L0277	CL71801
Dicamba [2C]	ND (0.010)		8151A		1	12/20/17 1:28	C7L0277	CL71801
Dichlorprop	ND (0.051)		8151A		1	12/20/17 1:28	C7L0277	CL71801
Dinoseb	ND (0.052)		8151A		1	12/20/17 1:28	C7L0277	CL71801
MCPA	ND (2.53)		8151A		1	12/20/17 1:28	C7L0277	CL71801
MCPP	ND (2.56)		8151A		1	12/20/17 1:28	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*78 %*		*30-150*
Surrogate: DCAA [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.97)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Chloronaphthalene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Chlorophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Methylnaphthalene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Methylphenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
2-Nitrophenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.787)		8270D		1	12/20/17 0:41	C7L0275	CL71507
3+4-Methylphenol	ND (0.787)		8270D		1	12/20/17 0:41	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
4-Chloroaniline	ND (0.787)		8270D		1	12/20/17 0:41	C7L0275	CL71507
4-Nitrophenol	ND (1.97)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Acenaphthene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Acenaphthylene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Acetophenone	ND (0.787)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Aniline	ND (1.97)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Anthracene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Azobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(a)anthracene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(a)pyrene	ND (0.197)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Butylbenzylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Chrysene	ND (0.197)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.197)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Dibenzofuran	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Diethylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Dimethylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Di-n-butylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Di-n-octylphthalate	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Fluoranthene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Fluorene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Hexachlorobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Hexachlorobutadiene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Hexachloroethane	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Isophorone	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Naphthalene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Nitrobenzene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Pentachlorophenol	ND (1.97)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Phenanthrene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Phenol	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507
Pyrene	ND (0.393)		8270D		1	12/20/17 0:41	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*62 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*74 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*63 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*57 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*61 %*		*30-130*				
Surrogate: Phenol-d6		*55 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*66 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**TR 4100** (100)		9060		1	DEL	12/22/17 19:07	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.47)		6020A		20	NAR	12/19/17 16:18	2.27	100	CL71841
Arsenic	**10.4** (2.35)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Barium	**20.3** (2.35)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Beryllium	**0.46** (0.10)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Cadmium	ND (0.47)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Chromium	**50.9** (0.94)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Lead	**22.8** (4.70)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Mercury	ND (0.025)		7471B		1	MJV	12/19/17 13:41	0.84	40	CL71842
Nickel	**22.6** (2.35)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Selenium	ND (0.47)		6020A		20	NAR	12/19/17 16:18	2.27	100	CL71841
Silver	ND (0.47)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Thallium	**0.60** (0.47)		6020A		20	NAR	12/19/17 16:18	2.27	100	CL71841
Vanadium	**17.5** (0.94)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841
Zinc	**29.6** (2.35)		6010C		1	KJK	12/20/17 2:53	2.27	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0021)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
1,4-Dioxane	ND (0.103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
2-Butanone	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
2-Chlorotoluene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
2-Hexanone	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
4-Chlorotoluene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Acetone	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Benzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Bromobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Bromochloromethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Bromoform	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Bromomethane	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Carbon Disulfide	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Chlorobenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Chloroethane	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Chloroform	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Chloromethane	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Dibromochloromethane	ND (0.0021)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Dibromomethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Diethyl Ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Di-isopropyl ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Ethylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Isopropylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Methylene Chloride	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Naphthalene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
n-Butylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
n-Propylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
sec-Butylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Styrene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
tert-Butylbenzene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Tetrachloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Tetrahydrofuran	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Toluene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Trichloroethene	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Vinyl Chloride	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Xylene O	ND (0.0051)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Xylene P,M	ND (0.0103)		8260B Low		1	12/18/17 0:41	C7L0260	CL71815
Xylenes (Total)	ND (0.0103)		8260B Low		1	12/18/17 0:41		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*130 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*94 %*		*70-130*
Surrogate: Dibromofluoromethane	*121 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
4,4´-DDE	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
4,4´-DDT	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Aldrin	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
alpha-BHC	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
alpha-Chlordane	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
beta-BHC	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Chlordane (Total)	ND (0.0221)		8081B		1	12/16/17 3:17	C7L0248	CL71508
delta-BHC	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Dieldrin	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endosulfan I	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endosulfan II	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endrin	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Endrin Ketone	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 3:17	C7L0248	CL71508
gamma-Chlordane	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Heptachlor	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Hexachlorobenzene [2C]	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508
Methoxychlor	ND (0.0028)		8081B		1	12/16/17 3:17	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*104 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*117 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*85 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 16:31		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 16:31		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 5:10	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 5:10	C7L0277	CL71801
2,4-D	ND (0.049)		8151A		1	12/20/17 5:10	C7L0277	CL71801
2,4-DB	ND (0.050)		8151A		1	12/20/17 5:10	C7L0277	CL71801
Dalapon	ND (0.048)		8151A		1	12/20/17 5:10	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 5:10	C7L0277	CL71801
Dichlorprop	ND (0.049)		8151A		1	12/20/17 5:10	C7L0277	CL71801
Dinoseb	ND (0.050)		8151A		1	12/20/17 5:10	C7L0277	CL71801
MCPA	ND (2.43)		8151A		1	12/20/17 5:10	C7L0277	CL71801
MCPP	ND (2.46)		8151A		1	12/20/17 5:10	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*76 %*		*30-150*
Surrogate: DCAA [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.86)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Chloronaphthalene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Chlorophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Methylnaphthalene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Methylphenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
2-Nitrophenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.742)		8270D		1	12/20/17 1:15	C7L0275	CL71507
3+4-Methylphenol	ND (0.742)		8270D		1	12/20/17 1:15	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
4-Chloroaniline	ND (0.742)		8270D		1	12/20/17 1:15	C7L0275	CL71507
4-Nitrophenol	ND (1.86)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Acenaphthene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Acenaphthylene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Acetophenone	ND (0.742)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Aniline	ND (1.86)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Anthracene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Azobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(a)anthracene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(a)pyrene	ND (0.186)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Butylbenzylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Chrysene	ND (0.186)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.186)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Dibenzofuran	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Diethylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Dimethylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Di-n-butylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Di-n-octylphthalate	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Fluoranthene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Fluorene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Hexachlorobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Hexachlorobutadiene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Hexachloroethane	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Isophorone	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Naphthalene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Nitrobenzene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Pentachlorophenol	ND (1.86)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Phenanthrene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Phenol	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507
Pyrene	ND (0.370)		8270D		1	12/20/17 1:15	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*61 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*78 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*62 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*56 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*59 %*		*30-130*				
Surrogate: Phenol-d6		*54 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*71 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**778** (100)		9060		1	DEL	12/22/17 3:27	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.44)		6020A		20	NAR	12/19/17 16:23	2.4	100	CL71841
Arsenic	**8.49** (2.22)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Barium	**20.7** (2.22)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Beryllium	**0.48** (0.10)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Cadmium	ND (0.44)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Chromium	**47.7** (0.89)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Lead	**22.6** (4.44)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Mercury	ND (0.027)		7471B		1	MJV	12/19/17 13:43	0.78	40	CL71842
Nickel	**21.4** (2.22)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Selenium	ND (0.44)		6020A		20	NAR	12/19/17 16:23	2.4	100	CL71841
Silver	ND (0.44)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Thallium	**0.54** (0.44)		6020A		20	NAR	12/19/17 16:23	2.4	100	CL71841
Vanadium	**16.6** (0.89)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841
Zinc	**30.3** (2.22)		6010C		1	KJK	12/20/17 2:57	2.4	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1,1-Trichloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1,2,2-Tetrachloroethane	ND (0.0019)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1,2-Trichloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1-Dichloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1-Dichloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,1-Dichloropropene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2,3-Trichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2,3-Trichloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2,4-Trichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2,4-Trimethylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dibromo-3-Chloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dibromoethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dichloroethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,2-Dichloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,3,5-Trimethylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,3-Dichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,3-Dichloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,4-Dichlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
1,4-Dioxane	ND (0.0951)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
2,2-Dichloropropane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
2-Butanone	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
2-Chlorotoluene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
2-Hexanone	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
4-Chlorotoluene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
4-Isopropyltoluene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
4-Methyl-2-Pentanone	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Acetone	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Benzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Bromobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Bromochloromethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Bromoform	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Bromomethane	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Carbon Disulfide	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Carbon Tetrachloride	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Chlorobenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Chloroethane	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Chloroform	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Chloromethane	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
cis-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
cis-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Dibromochloromethane	ND (0.0019)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Dibromomethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Dichlorodifluoromethane	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Diethyl Ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Di-isopropyl ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Ethyl tertiary-butyl ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Ethylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Hexachlorobutadiene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Isopropylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Methyl tert-Butyl Ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Methylene Chloride	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Naphthalene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
n-Butylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
n-Propylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
sec-Butylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Styrene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
tert-Butylbenzene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Tertiary-amyl methyl ether	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Tetrachloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Tetrahydrofuran	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Toluene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
trans-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Trichloroethene	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Trichlorofluoromethane	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Vinyl Chloride	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Xylene O	ND (0.0048)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Xylene P,M	ND (0.0095)		8260B Low		1	12/18/17 1:07	C7L0260	CL71815
Xylenes (Total)	ND (0.0095)		8260B Low		1	12/18/17 1:07		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*130 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*121 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
4,4´-DDE	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
4,4´-DDT	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Aldrin	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
alpha-BHC	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
alpha-Chlordane	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
beta-BHC	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Chlordane (Total)	ND (0.0221)		8081B		1	12/16/17 3:46	C7L0248	CL71508
delta-BHC	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Dieldrin	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endosulfan I	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endosulfan II	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endrin	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Endrin Ketone	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	12/16/17 3:46	C7L0248	CL71508
gamma-Chlordane	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Heptachlor	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Hexachlorobenzene	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508
Methoxychlor	ND (0.0028)		8081B		1	12/16/17 3:46	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*49 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*57 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1221	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1232	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1242	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1248	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1254	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1260	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1262	ND (0.06)		8082A		1	12/18/17 18:47		CL71502
Aroclor 1268	ND (0.06)		8082A		1	12/18/17 18:47		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 5:42	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 5:42	C7L0277	CL71801
2,4-D	ND (0.049)		8151A		1	12/20/17 5:42	C7L0277	CL71801
2,4-DB	ND (0.049)		8151A		1	12/20/17 5:42	C7L0277	CL71801
Dalapon	ND (0.047)		8151A		1	12/20/17 5:42	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 5:42	C7L0277	CL71801
Dichlorprop	ND (0.049)		8151A		1	12/20/17 5:42	C7L0277	CL71801
Dinoseb	ND (0.049)		8151A		1	12/20/17 5:42	C7L0277	CL71801
MCPA	ND (2.40)		8151A		1	12/20/17 5:42	C7L0277	CL71801
MCPP	ND (2.43)		8151A		1	12/20/17 5:42	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*92 %*		*30-150*
Surrogate: DCAA [2C]	*98 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.84)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Chloronaphthalene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Chlorophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Methylnaphthalene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Methylphenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
2-Nitrophenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.735)		8270D		1	12/20/17 1:49	C7L0275	CL71507
3+4-Methylphenol	ND (0.735)		8270D		1	12/20/17 1:49	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
4-Chloroaniline	ND (0.735)		8270D		1	12/20/17 1:49	C7L0275	CL71507
4-Nitrophenol	ND (1.84)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Acenaphthene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Acenaphthylene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Acetophenone	ND (0.735)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Aniline	ND (1.84)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Anthracene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Azobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(a)anthracene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(a)pyrene	ND (0.184)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Butylbenzylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Chrysene	ND (0.184)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.184)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Dibenzofuran	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Diethylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Dimethylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Di-n-butylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Di-n-octylphthalate	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Fluoranthene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Fluorene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Hexachlorobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Hexachlorobutadiene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Hexachloroethane	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Isophorone	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Naphthalene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Nitrobenzene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Pentachlorophenol	ND (1.84)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Phenanthrene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Phenol	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507
Pyrene	ND (0.367)		8270D		1	12/20/17 1:49	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*57 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*73 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*57 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*63 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*52 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*54 %*		*30-130*				
Surrogate: Phenol-d6		*50 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*71 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**TR 2710** (100)		9060		1	DEL	12/22/17 19:56	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.47)		6020A		20	NAR	12/19/17 16:29	2.17	100	CL71841
Arsenic	ND (2.36)		6010C		1	KJK	12/20/17 14:31	2.17	100	CL71841
Barium	**16.2** (2.36)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Beryllium	**0.32** (0.10)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Cadmium	ND (0.47)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Chromium	**16.7** (0.95)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Lead	ND (4.73)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Mercury	ND (0.033)		7471B		1	MJV	12/19/17 13:45	0.62	40	CL71842
Nickel	**16.8** (2.36)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Selenium	ND (0.47)		6020A		20	NAR	12/19/17 16:29	2.17	100	CL71841
Silver	ND (0.47)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Thallium	ND (0.47)		6020A		20	NAR	12/19/17 16:29	2.17	100	CL71841
Vanadium	**56.0** (0.95)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841
Zinc	**32.1** (2.36)		6010C		1	KJK	12/20/17 3:01	2.17	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1,1-Trichloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1,2,2-Tetrachloroethane	ND (0.0016)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1,2-Trichloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1-Dichloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1-Dichloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,1-Dichloropropene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2,3-Trichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2,3-Trichloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2,4-Trichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2,4-Trimethylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dibromo-3-Chloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dibromoethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dichloroethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,2-Dichloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,3,5-Trimethylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,3-Dichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,3-Dichloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,4-Dichlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
1,4-Dioxane	ND (0.0814)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
2,2-Dichloropropane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
2-Butanone	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
2-Chlorotoluene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
2-Hexanone	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
4-Chlorotoluene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
4-Isopropyltoluene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
4-Methyl-2-Pentanone	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Acetone	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Benzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Bromobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Bromochloromethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Bromoform	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Bromomethane	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Carbon Disulfide	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Carbon Tetrachloride	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Chlorobenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Chloroethane	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Chloroform	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Chloromethane	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
cis-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
cis-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Dibromochloromethane	ND (0.0016)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Dibromomethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Dichlorodifluoromethane	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Diethyl Ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Di-isopropyl ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Ethyl tertiary-butyl ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Ethylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Hexachlorobutadiene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Isopropylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Methyl tert-Butyl Ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Methylene Chloride	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Naphthalene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
n-Butylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
n-Propylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
sec-Butylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Styrene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
tert-Butylbenzene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Tertiary-amyl methyl ether	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Tetrachloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Tetrahydrofuran	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Toluene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
trans-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Trichloroethene	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Trichlorofluoromethane	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Vinyl Chloride	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Xylene O	ND (0.0041)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Xylene P,M	ND (0.0081)		8260B Low		1	12/18/17 16:00	C7L0261	CL71816
Xylenes (Total)	ND (0.0081)		8260B Low		1	12/18/17 16:00		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*120 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
4,4´-DDE	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
4,4´-DDT	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Aldrin	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
alpha-BHC	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
alpha-Chlordane	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
beta-BHC	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Chlordane (Total)	ND (0.0210)		8081B		1	12/16/17 4:15	C7L0248	CL71508
delta-BHC	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Dieldrin	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endosulfan I	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endosulfan II	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endrin	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Endrin Ketone	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	12/16/17 4:15	C7L0248	CL71508
gamma-Chlordane	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Heptachlor	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Hexachlorobenzene	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508
Methoxychlor	ND (0.0026)		8081B		1	12/16/17 4:15	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*99 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*112 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1221	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1232	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1242	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1248	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1254	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1260	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1262	ND (0.05)		8082A		1	12/18/17 19:06		CL71502
Aroclor 1268	ND (0.05)		8082A		1	12/18/17 19:06		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*82 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*74 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 6:14	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 6:14	C7L0277	CL71801
2,4-D	ND (0.047)		8151A		1	12/20/17 6:14	C7L0277	CL71801
2,4-DB	ND (0.048)		8151A		1	12/20/17 6:14	C7L0277	CL71801
Dalapon	ND (0.046)		8151A		1	12/20/17 6:14	C7L0277	CL71801
Dicamba	ND (0.009)		8151A		1	12/20/17 6:14	C7L0277	CL71801
Dichlorprop	ND (0.047)		8151A		1	12/20/17 6:14	C7L0277	CL71801
Dinoseb	ND (0.048)		8151A		1	12/20/17 6:14	C7L0277	CL71801
MCPA	# ND (2.34)		8151A		1	12/20/17 6:14	C7L0277	CL71801
MCPP	ND (2.36)		8151A		1	12/20/17 6:14	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*79 %*		*30-150*
Surrogate: DCAA [2C]	*109 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
1,2-Dichlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
1,3-Dichlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
1,4-Dichlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4,5-Trichlorophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4,6-Trichlorophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4-Dichlorophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4-Dimethylphenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4-Dinitrophenol	ND (1.71)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,4-Dinitrotoluene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2,6-Dinitrotoluene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Chloronaphthalene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Chlorophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Methylnaphthalene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Methylphenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
2-Nitrophenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
3,3′-Dichlorobenzidine	ND (0.684)		8270D		1	12/20/17 2:23	C7L0275	CL71507
3+4-Methylphenol	ND (0.684)		8270D		1	12/20/17 2:23	C7L0275	CL71507
4-Bromophenyl-phenylether	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
4-Chloroaniline	ND (0.684)		8270D		1	12/20/17 2:23	C7L0275	CL71507
4-Nitrophenol	ND (1.71)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Acenaphthene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Acenaphthylene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Acetophenone	ND (0.684)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Aniline	ND (1.71)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Anthracene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Azobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(a)anthracene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(a)pyrene	ND (0.171)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(b)fluoranthene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(g,h,i)perylene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Benzo(k)fluoranthene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
bis(2-Chloroethyl)ether	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
bis(2-chloroisopropyl)Ether	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Butylbenzylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Chrysene	ND (0.171)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Dibenzo(a,h)Anthracene	ND (0.171)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Dibenzofuran	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Diethylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Dimethylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Di-n-butylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Di-n-octylphthalate	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Fluoranthene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Fluorene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Hexachlorobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Hexachlorobutadiene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Hexachloroethane	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Isophorone	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Naphthalene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Nitrobenzene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
N-Nitrosodimethylamine	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Pentachlorophenol	ND (1.71)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Phenanthrene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Phenol	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507
Pyrene	ND (0.342)		8270D		1	12/20/17 2:23	C7L0275	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*80 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*63 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*66 %*		*30-130*				
Surrogate: Phenol-d6		*60 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*79 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**2500** (100)		9060		1	DEL	12/22/17 4:00	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.46)		6020A		20	NAR	12/19/17 16:35	2.24	100	CL71841
Arsenic	ND (2.29)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Barium	**16.2** (2.29)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Beryllium	**0.33** (0.10)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Cadmium	ND (0.46)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Chromium	**17.6** (0.92)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Lead	ND (4.58)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Mercury	ND (0.032)		7471B		1	MJV	12/19/17 13:47	0.64	40	CL71842
Nickel	**17.9** (2.29)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Selenium	ND (0.46)		6020A		20	NAR	12/19/17 16:35	2.24	100	CL71841
Silver	ND (0.46)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Thallium	ND (0.46)		6020A		20	NAR	12/19/17 16:35	2.24	100	CL71841
Vanadium	**58.9** (0.92)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841
Zinc	**33.4** (2.29)		6010C		1	KJK	12/20/17 3:40	2.24	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1,1-Trichloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1,2,2-Tetrachloroethane	ND (0.0014)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1,2-Trichloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1-Dichloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1-Dichloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,1-Dichloropropene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2,3-Trichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2,3-Trichloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2,4-Trichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2,4-Trimethylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dibromo-3-Chloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dibromoethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dichloroethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,2-Dichloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,3,5-Trimethylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,3-Dichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,3-Dichloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,4-Dichlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
1,4-Dioxane	ND (0.0713)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
2,2-Dichloropropane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
2-Butanone	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
2-Chlorotoluene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
2-Hexanone	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
4-Chlorotoluene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
4-Isopropyltoluene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
4-Methyl-2-Pentanone	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Acetone	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Benzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Bromobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Bromochloromethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Bromoform	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Bromomethane	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Carbon Disulfide	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Carbon Tetrachloride	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Chlorobenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Chloroethane	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Chloroform	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Chloromethane	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
cis-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
cis-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Dibromochloromethane	ND (0.0014)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Dibromomethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Dichlorodifluoromethane	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Diethyl Ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Di-isopropyl ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Ethyl tertiary-butyl ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Ethylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Hexachlorobutadiene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Isopropylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Methyl tert-Butyl Ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Methylene Chloride	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Naphthalene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
n-Butylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
n-Propylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
sec-Butylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Styrene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
tert-Butylbenzene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Tertiary-amyl methyl ether	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Tetrachloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Tetrahydrofuran	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Toluene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
trans-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Trichloroethene	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Trichlorofluoromethane	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Vinyl Chloride	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Xylene O	ND (0.0036)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Xylene P,M	ND (0.0071)		8260B Low		1	12/18/17 16:25	C7L0261	CL71816
Xylenes (Total)	ND (0.0071)		8260B Low		1	12/18/17 16:25		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*133 %*	*S+*	*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*121 %*		*70-130*
Surrogate: Toluene-d8	*95 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
4,4´-DDE	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
4,4´-DDT	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Aldrin	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
alpha-BHC	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
alpha-Chlordane	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
beta-BHC	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Chlordane (Total)	ND (0.0205)		8081B		1	12/16/17 4:45	C7L0248	CL71508
delta-BHC	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Dieldrin	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endosulfan I	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endosulfan II	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endrin	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Endrin Ketone	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/16/17 4:45	C7L0248	CL71508
gamma-Chlordane	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Heptachlor	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Hexachlorobenzene	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508
Methoxychlor	ND (0.0026)		8081B		1	12/16/17 4:45	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*38 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*44 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1221	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1232	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1242	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1248	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1254	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1260	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1262	ND (0.05)		8082A		1	12/18/17 19:26		CL71502
Aroclor 1268	ND (0.05)		8082A		1	12/18/17 19:26		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*94 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 6:46	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 6:46	C7L0277	CL71801
2,4-D	ND (0.048)		8151A		1	12/20/17 6:46	C7L0277	CL71801
2,4-DB	ND (0.048)		8151A		1	12/20/17 6:46	C7L0277	CL71801
Dalapon	ND (0.046)		8151A		1	12/20/17 6:46	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 6:46	C7L0277	CL71801
Dichlorprop	ND (0.048)		8151A		1	12/20/17 6:46	C7L0277	CL71801
Dinoseb	ND (0.048)		8151A		1	12/20/17 6:46	C7L0277	CL71801
MCPA	ND (2.36)		8151A		1	12/20/17 6:46	C7L0277	CL71801
MCPP	ND (2.39)		8151A		1	12/20/17 6:46	C7L0277	CL71801

	%Recovery	Qualifier	Limits
Surrogate: DCAA	*79 %*		*30-150*
Surrogate: DCAA [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
1,2-Dichlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
1,3-Dichlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
1,4-Dichlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4,5-Trichlorophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4,6-Trichlorophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4-Dichlorophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4-Dimethylphenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4-Dinitrophenol	ND (1.70)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,4-Dinitrotoluene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2,6-Dinitrotoluene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Chloronaphthalene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Chlorophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Methylnaphthalene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Methylphenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
2-Nitrophenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
3,3′-Dichlorobenzidine	ND (0.680)		8270D		1	12/20/17 16:31	C7L0304	CL71507
3+4-Methylphenol	ND (0.680)		8270D		1	12/20/17 16:31	C7L0304	CL71507
4-Bromophenyl-phenylether	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
4-Chloroaniline	ND (0.680)		8270D		1	12/20/17 16:31	C7L0304	CL71507
4-Nitrophenol	ND (1.70)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Acenaphthene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Acenaphthylene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Acetophenone	ND (0.680)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Aniline	ND (1.70)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Anthracene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Azobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(a)anthracene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(a)pyrene	ND (0.170)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(b)fluoranthene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(g,h,i)perylene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Benzo(k)fluoranthene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
bis(2-Chloroethyl)ether	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
bis(2-chloroisopropyl)Ether	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Butylbenzylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Chrysene	ND (0.170)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Dibenzo(a,h)Anthracene	ND (0.170)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Dibenzofuran	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Diethylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Dimethylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Di-n-butylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Di-n-octylphthalate	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Fluoranthene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Fluorene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Hexachlorobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Hexachlorobutadiene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Hexachloroethane	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Isophorone	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Naphthalene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Nitrobenzene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
N-Nitrosodimethylamine	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Pentachlorophenol	ND (1.70)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Phenanthrene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Phenol	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507
Pyrene	ND (0.340)		8270D		1	12/20/17 16:31	C7L0304	CL71507

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*84 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*75 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*79 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*67 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*71 %*		*30-130*				
Surrogate: Phenol-d6		*66 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*77 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**4230** (100)		9060		1	DEL	12/22/17 20:13	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.48)		6020A		20	NAR	12/19/17 16:41	2.15	100	CL71841
Arsenic	**2.52** (2.39)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Barium	**17.4** (2.39)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Beryllium	**0.36** (0.11)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Cadmium	ND (0.48)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Chromium	**22.7** (0.96)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Lead	ND (4.78)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Mercury	ND (0.025)		7471B		1	MJV	12/19/17 13:49	0.8	40	CL71842
Nickel	**20.0** (2.39)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Selenium	ND (0.48)		6020A		20	NAR	12/19/17 16:41	2.15	100	CL71841
Silver	ND (0.48)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Thallium	ND (0.48)		6020A		20	NAR	12/19/17 16:41	2.15	100	CL71841
Vanadium	**56.0** (0.96)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841
Zinc	**33.6** (2.39)		6010C		1	KJK	12/20/17 3:44	2.15	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1,1-Trichloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1,2,2-Tetrachloroethane	ND (0.0015)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1,2-Trichloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1-Dichloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1-Dichloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,1-Dichloropropene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2,3-Trichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2,3-Trichloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2,4-Trichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2,4-Trimethylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dibromo-3-Chloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dibromoethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dichloroethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,2-Dichloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,3,5-Trimethylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,3-Dichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,3-Dichloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,4-Dichlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
1,4-Dioxane	ND (0.0767)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
2,2-Dichloropropane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
2-Butanone	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
2-Chlorotoluene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
2-Hexanone	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
4-Chlorotoluene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
4-Isopropyltoluene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
4-Methyl-2-Pentanone	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Acetone	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Benzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Bromobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Bromochloromethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Bromoform	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Bromomethane	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Carbon Disulfide	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Carbon Tetrachloride	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Chlorobenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Chloroethane	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Chloroform	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Chloromethane	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
cis-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
cis-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Dibromochloromethane	ND (0.0015)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Dibromomethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Dichlorodifluoromethane	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Diethyl Ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Di-isopropyl ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Ethyl tertiary-butyl ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Ethylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Hexachlorobutadiene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Isopropylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Methyl tert-Butyl Ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Methylene Chloride	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Naphthalene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
n-Butylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
n-Propylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
sec-Butylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Styrene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
tert-Butylbenzene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Tertiary-amyl methyl ether	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Tetrachloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Tetrahydrofuran	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Toluene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
trans-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Trichloroethene	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Trichlorofluoromethane	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Vinyl Chloride	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Xylene O	ND (0.0038)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Xylene P,M	ND (0.0077)		8260B Low		1	12/18/17 16:51	C7L0261	CL71816
Xylenes (Total)	ND (0.0077)		8260B Low		1	12/18/17 16:51		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*134 %*	*S+*	*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*123 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 20.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
4,4´-DDE	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
4,4´-DDT	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Aldrin	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
alpha-BHC	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
alpha-Chlordane	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
beta-BHC	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Chlordane (Total)	ND (0.0203)		8081B		1	12/16/17 5:14	C7L0248	CL71508
delta-BHC	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Dieldrin	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endosulfan I	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endosulfan II	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endrin	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Endrin Ketone	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/16/17 5:14	C7L0248	CL71508
gamma-Chlordane	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Heptachlor	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Hexachlorobenzene	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508
Methoxychlor	ND (0.0025)		8081B		1	12/16/17 5:14	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*100 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*115 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1221	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1232	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1242	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1248	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1254	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1260	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1262	ND (0.05)		8082A		1	12/18/17 19:45		CL71502
Aroclor 1268	ND (0.05)		8082A		1	12/18/17 19:45		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*92 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 7:18	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 7:18	C7L0277	CL71801
2,4-D	ND (0.047)		8151A		1	12/20/17 7:18	C7L0277	CL71801
2,4-DB	ND (0.048)		8151A		1	12/20/17 7:18	C7L0277	CL71801
Dalapon	ND (0.046)		8151A		1	12/20/17 7:18	C7L0277	CL71801
Dicamba	ND (0.009)		8151A		1	12/20/17 7:18	C7L0277	CL71801
Dichlorprop	ND (0.047)		8151A		1	12/20/17 7:18	C7L0277	CL71801
Dinoseb	ND (0.048)		8151A		1	12/20/17 7:18	C7L0277	CL71801
MCPA	ND (2.34)		8151A		1	12/20/17 7:18	C7L0277	CL71801
MCPP	ND (2.37)		8151A		1	12/20/17 7:18	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*84 %*		*30-150*
Surrogate: DCAA [2C]	*95 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
1,2-Dichlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
1,3-Dichlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
1,4-Dichlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4,5-Trichlorophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4,6-Trichlorophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4-Dichlorophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4-Dimethylphenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4-Dinitrophenol	ND (1.65)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,4-Dinitrotoluene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2,6-Dinitrotoluene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Chloronaphthalene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Chlorophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Methylnaphthalene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Methylphenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
2-Nitrophenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
3,3′-Dichlorobenzidine	ND (0.659)		8270D		1	12/20/17 17:05	C7L0304	CL71507
3+4-Methylphenol	ND (0.659)		8270D		1	12/20/17 17:05	C7L0304	CL71507
4-Bromophenyl-phenylether	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
4-Chloroaniline	ND (0.659)		8270D		1	12/20/17 17:05	C7L0304	CL71507
4-Nitrophenol	ND (1.65)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Acenaphthene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Acenaphthylene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Acetophenone	ND (0.659)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Aniline	ND (1.65)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Anthracene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Azobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(a)anthracene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(a)pyrene	ND (0.165)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(b)fluoranthene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(g,h,i)perylene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Benzo(k)fluoranthene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
bis(2-Chloroethyl)ether	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
bis(2-chloroisopropyl)Ether	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Butylbenzylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Chrysene	ND (0.165)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Dibenzo(a,h)Anthracene	ND (0.165)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Dibenzofuran	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Diethylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Dimethylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Di-n-butylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Di-n-octylphthalate	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Fluoranthene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Fluorene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Hexachlorobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Hexachlorobutadiene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Hexachloroethane	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Isophorone	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Naphthalene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Nitrobenzene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
N-Nitrosodimethylamine	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Pentachlorophenol	ND (1.65)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Phenanthrene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Phenol	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507
Pyrene	ND (0.329)		8270D		1	12/20/17 17:05	C7L0304	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*65 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*71 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*64 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*68 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*57 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*61 %*		*30-130*				
Surrogate: Phenol-d6		*56 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*76 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**3150** (100)		9060		1	DEL	12/22/17 21:03	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: %

Dioxins

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.44)		6020A		20	NAR	12/19/17 16:47	2.35	100	CL71841
Arsenic	ND (2.19)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Barium	**18.1** (2.19)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Beryllium	**0.30** (0.10)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Cadmium	ND (0.44)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Chromium	**19.2** (0.88)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Lead	ND (4.38)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Mercury	ND (0.033)		7471B		1	MJV	12/19/17 13:51	0.61	40	CL71842
Nickel	**18.8** (2.19)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Selenium	ND (0.44)		6020A		20	NAR	12/19/17 16:47	2.35	100	CL71841
Silver	ND (0.88)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Thallium	ND (0.44)		6020A		20	NAR	12/19/17 16:47	2.35	100	CL71841
Vanadium	**49.6** (0.88)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841
Zinc	**34.2** (2.19)		6010C		1	KJK	12/20/17 3:48	2.35	100	CL71841

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1,1-Trichloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1,2,2-Tetrachloroethane	ND (0.0015)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1,2-Trichloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1-Dichloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1-Dichloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,1-Dichloropropene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2,3-Trichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2,3-Trichloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2,4-Trichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2,4-Trimethylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dibromo-3-Chloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dibromoethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dichloroethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,2-Dichloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,3,5-Trimethylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,3-Dichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,3-Dichloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,4-Dichlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
1,4-Dioxane	ND (0.0746)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
2,2-Dichloropropane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
2-Butanone	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
2-Chlorotoluene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
2-Hexanone	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
4-Chlorotoluene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
4-Isopropyltoluene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
4-Methyl-2-Pentanone	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Acetone	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Benzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Bromobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Bromochloromethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Bromoform	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Bromomethane	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Carbon Disulfide	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Carbon Tetrachloride	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Chlorobenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Chloroethane	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Chloroform	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Chloromethane	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
cis-1,2-Dichloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
cis-1,3-Dichloropropene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Dibromochloromethane	ND (0.0015)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Dibromomethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Dichlorodifluoromethane	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Diethyl Ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Di-isopropyl ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Ethyl tertiary-butyl ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Ethylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Hexachlorobutadiene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Isopropylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Methyl tert-Butyl Ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Methylene Chloride	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Naphthalene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
n-Butylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
n-Propylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
sec-Butylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Styrene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
tert-Butylbenzene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Tertiary-amyl methyl ether	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Tetrachloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Tetrahydrofuran	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Toluene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
trans-1,3-Dichloropropene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Trichloroethene	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Trichlorofluoromethane	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Vinyl Chloride	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Xylene O	ND (0.0037)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Xylene P,M	ND (0.0075)		8260B Low		1	12/18/17 17:16	C7L0261	CL71816
Xylenes (Total)	ND (0.0075)		8260B Low		1	12/18/17 17:16		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*131 %*	*S+*	*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*122 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
4,4´-DDE	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
4,4´-DDT	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Aldrin	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
alpha-BHC	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
alpha-Chlordane	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
beta-BHC	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Chlordane (Total)	ND (0.0206)		8081B		1	12/16/17 5:43	C7L0248	CL71508
delta-BHC	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Dieldrin	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endosulfan I	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endosulfan II	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endosulfan Sulfate	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endrin	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Endrin Ketone	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	12/16/17 5:43	C7L0248	CL71508
gamma-Chlordane	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Heptachlor	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Heptachlor Epoxide	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Hexachlorobenzene [2C]	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508
Methoxychlor	ND (0.0026)		8081B		1	12/16/17 5:43	C7L0248	CL71508

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*106 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*119 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 20.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1221	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1232	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1242	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1248	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1254	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1260	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1262	ND (0.05)		8082A		1	12/18/17 20:04		CL71502
Aroclor 1268	ND (0.05)		8082A		1	12/18/17 20:04		CL71502

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*94 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

8151A Chlorinated Herbicides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2,4,5-T	ND (0.010)		8151A		1	12/20/17 7:50	C7L0277	CL71801
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	12/20/17 7:50	C7L0277	CL71801
2,4-D	ND (0.048)		8151A		1	12/20/17 7:50	C7L0277	CL71801
2,4-DB	ND (0.048)		8151A		1	12/20/17 7:50	C7L0277	CL71801
Dalapon	ND (0.046)		8151A		1	12/20/17 7:50	C7L0277	CL71801
Dicamba	ND (0.010)		8151A		1	12/20/17 7:50	C7L0277	CL71801
Dichlorprop	ND (0.048)		8151A		1	12/20/17 7:50	C7L0277	CL71801
Dinoseb	ND (0.048)		8151A		1	12/20/17 7:50	C7L0277	CL71801
MCPA	ND (2.37)		8151A		1	12/20/17 7:50	C7L0277	CL71801
MCPP	ND (2.39)		8151A		1	12/20/17 7:50	C7L0277	CL71801

	%Recovery	*Qualifier*	*Limits*
Surrogate: DCAA	*81 %*		*30-150*
Surrogate: DCAA [2C]	*90 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
1,2-Dichlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
1,3-Dichlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
1,4-Dichlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4,5-Trichlorophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4,6-Trichlorophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4-Dichlorophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4-Dimethylphenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4-Dinitrophenol	ND (1.77)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,4-Dinitrotoluene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2,6-Dinitrotoluene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Chloronaphthalene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Chlorophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Methylnaphthalene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Methylphenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
2-Nitrophenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
3,3′-Dichlorobenzidine	ND (0.705)		8270D		1	12/20/17 17:39	C7L0304	CL71507
3+4-Methylphenol	ND (0.705)		8270D		1	12/20/17 17:39	C7L0304	CL71507
4-Bromophenyl-phenylether	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
4-Chloroaniline	ND (0.705)		8270D		1	12/20/17 17:39	C7L0304	CL71507
4-Nitrophenol	ND (1.77)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Acenaphthene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Acenaphthylene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Acetophenone	ND (0.705)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Aniline	ND (1.77)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Anthracene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Azobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(a)anthracene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(a)pyrene	ND (0.177)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(b)fluoranthene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(g,h,i)perylene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Benzo(k)fluoranthene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
bis(2-Chloroethoxy)methane	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
bis(2-Chloroethyl)ether	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
bis(2-chloroisopropyl)Ether	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
bis(2-Ethylhexyl)phthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Butylbenzylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Chrysene	ND (0.177)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Dibenzo(a,h)Anthracene	ND (0.177)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Dibenzofuran	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Diethylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Dimethylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Di-n-butylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Di-n-octylphthalate	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Fluoranthene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Fluorene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Hexachlorobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Hexachlorobutadiene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Hexachloroethane	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Indeno(1,2,3-cd)Pyrene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Isophorone	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Naphthalene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Nitrobenzene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
N-Nitrosodimethylamine	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Pentachlorophenol	ND (1.77)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Phenanthrene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Phenol	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507
Pyrene	ND (0.352)		8270D		1	12/20/17 17:39	C7L0304	CL71507

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*72 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*79 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*77 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: 2-Fluorophenol		*65 %*		*30-130*				
Surrogate: Nitrobenzene-d5		*66 %*		*30-130*				
Surrogate: Phenol-d6		*64 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*79 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**3310** (100)		9060		1	DEL	12/22/17 5:23	mg/kg dry wt	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
				Total Metals						
Batch CL71841 - 3050B										
Blank										
Antimony	ND	0.50	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	0.50	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	0.50	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	58.6	4.72	mg/kg wet	48.00		122	0-238			
Arsenic	115	9.43	mg/kg wet	123.0		93	80-120			
Barium	280	9.43	mg/kg wet	253.0		111	80-120			
Beryllium	176	0.42	mg/kg wet	192.0		92	80-120			
Cadmium	198	1.89	mg/kg wet	224.0		88	80-120			
Chromium	174	3.77	mg/kg wet	179.0		97	80-120			
Lead	146	18.9	mg/kg wet	145.0		101	80-120			
Nickel	140	9.43	mg/kg wet	143.0		98	80-120			
Selenium	43.9	4.72	mg/kg wet	42.40		104	80-120			
Silver	80.9	1.89	mg/kg wet	81.60		99	80-120			
Thallium	50.7	4.72	mg/kg wet	52.00		98	80-120			
Vanadium	67.1	3.77	mg/kg wet	72.30		93	80-120			
Zinc	710	9.43	mg/kg wet	770.0		92	80-120			
LCS Dup										
Antimony	65.3	4.81	mg/kg wet	48.00		136	0-238	11	30	
Arsenic	117	9.62	mg/kg wet	123.0		95	80-120	2	20	
Barium	227	9.62	mg/kg wet	253.0		90	80-120	21	20	D+
Beryllium	180	0.42	mg/kg wet	192.0		94	80-120	2	20	
Cadmium	207	1.92	mg/kg wet	224.0		92	80-120	4	20	
Chromium	184	3.85	mg/kg wet	179.0		103	80-120	5	20	
Lead	149	19.2	mg/kg wet	145.0		102	80-120	1	20	
Nickel	144	9.62	mg/kg wet	143.0		101	80-120	2	20	
Selenium	47.6	4.81	mg/kg wet	42.40		112	80-120	8	30	
Silver	84.1	1.92	mg/kg wet	81.60		103	80-120	4	20	
Thallium	56.3	4.81	mg/kg wet	52.00		108	80-120	10	30	
Vanadium	70.6	3.85	mg/kg wet	72.30		98	80-120	5	20	
Zinc	747	9.62	mg/kg wet	770.0		97	80-120	5	20	
Reference										
Lead	4270	17.9	mg/kg wet	4490		95	83-113			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CL71842 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	15.5	1.90	mg/kg wet	17.80		87	80-120			
LCS Dup										
Mercury	18.7	1.46	mg/kg wet	17.80		105	80-120	19	20	
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0602*		mg/kg wet	*0.05000*		*120*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0467*		mg/kg wet	*0.05000*		*93*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0573*		mg/kg wet	*0.05000*		*115*	*70-130*			
Surrogate: Toluene-d8	*0.0489*		mg/kg wet	*0.05000*		*98*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
1,1,1-Trichloroethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
1,1,2,2-Tetrachloroethane	0.0431	0.0020	mg/kg wet	0.05000		86	70-130			
1,1,2-Trichloroethane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloroethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
1,1-Dichloroethene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
1,1-Dichloropropene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,4-Trichlorobenzene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,4-Trimethylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromo-3-Chloropropane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
1,2-Dibromoethane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichlorobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,2-Dichloropropane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
1,3,5-Trimethylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichloropropane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,4-Dioxane	0.783	0.100	mg/kg wet	1.000		78	70-130			
2,2-Dichloropropane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
2-Butanone	0.225	0.0100	mg/kg wet	0.2500		90	70-130			
2-Chlorotoluene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
2-Hexanone	0.187	0.0100	mg/kg wet	0.2500		75	70-130			
4-Chlorotoluene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
4-Isopropyltoluene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
4-Methyl-2-Pentanone	0.194	0.0100	mg/kg wet	0.2500		77	70-130			
Acetone	0.225	0.0100	mg/kg wet	0.2500		90	70-130			
Benzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Bromobenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Bromochloromethane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Bromodichloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Bromoform	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Bromomethane	0.0522	0.0100	mg/kg wet	0.05000		104	70-130			
Carbon Disulfide	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Carbon Tetrachloride	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Chlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0441	0.0100	mg/kg wet	0.05000		88	70-130			
Chloroform	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Chloromethane	0.0525	0.0100	mg/kg wet	0.05000		105	70-130			
cis-1,2-Dichloroethene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
cis-1,3-Dichloropropene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Dibromochloromethane	0.0440	0.0020	mg/kg wet	0.05000		88	70-130			
Dibromomethane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Dichlorodifluoromethane	0.0488	0.0100	mg/kg wet	0.05000		98	70-130			
Diethyl Ether	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
Di-isopropyl ether	0.0417	0.0050	mg/kg wet	0.05000		83	70-130			
Ethyl tertiary-butyl ether	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
Ethylbenzene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
Hexachlorobutadiene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Isopropylbenzene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130			
Methyl tert-Butyl Ether	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Methylene Chloride	0.0456	0.0100	mg/kg wet	0.05000		91	70-130			
Naphthalene	0.0368	0.0050	mg/kg wet	0.05000		74	70-130			
n-Butylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
n-Propylbenzene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
sec-Butylbenzene	0.0356	0.0050	mg/kg wet	0.05000		71	70-130			
Styrene	0.0384	0.0050	mg/kg wet	0.05000		77	70-130			
tert-Butylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Tertiary-amyl methyl ether	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Tetrachloroethene	0.0408	0.0050	mg/kg wet	0.05000		82	70-130			
Tetrahydrofuran	0.0348	0.0050	mg/kg wet	0.05000		70	70-130			
Toluene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
trans-1,2-Dichloroethene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
trans-1,3-Dichloropropene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Trichloroethene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
Trichlorofluoromethane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Vinyl Chloride	0.0512	0.0100	mg/kg wet	0.05000		102	70-130			
Xylene O	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
Xylene P,M	0.0857	0.0100	mg/kg wet	0.1000		86	70-130			
Xylenes (Total)	0.130	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0575*		mg/kg wet	*0.05000*		*115*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0517*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0553*		mg/kg wet	*0.05000*		*111*	*70-130*			
Surrogate: Toluene-d8	*0.0492*		mg/kg wet	*0.05000*		*98*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	4	20	
1,1,1-Trichloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	4	20	
1,1,2,2-Tetrachloroethane	0.0464	0.0020	mg/kg wet	0.05000		93	70-130	7	20	
1,1,2-Trichloroethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	4	20	
1,1-Dichloroethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
1,1-Dichloroethene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	7	20	
1,1-Dichloropropene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	5	20	
1,2,3-Trichlorobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	5	20	
1,2,3-Trichloropropane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	20	
1,2,4-Trichlorobenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	4	20	
1,2,4-Trimethylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	6	20	
1,2-Dibromo-3-Chloropropane	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	5	20	
1,2-Dibromoethane	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	5	20	
1,2-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	6	20	
1,2-Dichloroethane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	4	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
1,2-Dichloropropane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	5	20	
1,3,5-Trimethylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	7	20	
1,3-Dichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	4	20	
1,3-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	3	20	
1,4-Dichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	5	20	
1,4-Dioxane	0.838	0.100	mg/kg wet	1.000		84	70-130	7	20	
2,2-Dichloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	5	20	
2-Butanone	0.233	0.0100	mg/kg wet	0.2500		93	70-130	4	20	
2-Chlorotoluene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	8	20	
2-Hexanone	0.193	0.0100	mg/kg wet	0.2500		77	70-130	3	20	
4-Chlorotoluene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	5	20	
4-Isopropyltoluene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	6	20	
4-Methyl-2-Pentanone	0.201	0.0100	mg/kg wet	0.2500		80	70-130	4	20	
Acetone	0.235	0.0100	mg/kg wet	0.2500		94	70-130	4	20	
Benzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
Bromobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	8	20	
Bromochloromethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	3	20	
Bromodichloromethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	4	20	
Bromoform	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
Bromomethane	0.0576	0.0100	mg/kg wet	0.05000		115	70-130	10	20	
Carbon Disulfide	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	4	20	
Carbon Tetrachloride	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	4	20	
Chlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
Chloroethane	0.0456	0.0100	mg/kg wet	0.05000		91	70-130	3	20	
Chloroform	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	3	20	
Chloromethane	0.0537	0.0100	mg/kg wet	0.05000		107	70-130	2	20	
cis-1,2-Dichloroethene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
cis-1,3-Dichloropropene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	5	20	
Dibromochloromethane	0.0458	0.0020	mg/kg wet	0.05000		92	70-130	4	20	
Dibromomethane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	3	20	
Dichlorodifluoromethane	0.0500	0.0100	mg/kg wet	0.05000		100	70-130	2	20	
Diethyl Ether	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	5	20	
Di-isopropyl ether	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	5	20	
Ethyl tertiary-butyl ether	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	6	20	
Ethylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	5	20	
Hexachlorobutadiene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	7	20	
Isopropylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	8	20	
Methyl tert-Butyl Ether	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	6	20	
Methylene Chloride	0.0472	0.0100	mg/kg wet	0.05000		94	70-130	3	20	
Naphthalene	0.0392	0.0050	mg/kg wet	0.05000		78	70-130	6	20	
n-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	5	20	
n-Propylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	7	20	
sec-Butylbenzene	0.0378	0.0050	mg/kg wet	0.05000		76	70-130	6	20	
Styrene	0.0401	0.0050	mg/kg wet	0.05000		80	70-130	4	20	
tert-Butylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	8	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71815 - 5035										
Tertiary-amyl methyl ether	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	6	20	
Tetrachloroethene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130	5	20	
Tetrahydrofuran	0.0369	0.0050	mg/kg wet	0.05000		74	70-130	6	20	
Toluene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	4	20	
trans-1,2-Dichloroethene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	6	20	
trans-1,3-Dichloropropene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	6	20	
Trichloroethene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	3	20	
Trichlorofluoromethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	4	20	
Vinyl Chloride	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	2	20	
Xylene O	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	3	20	
Xylene P,M	0.0893	0.0100	mg/kg wet	0.1000		89	70-130	4	20	
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0559*		mg/kg wet	*0.05000*		*112*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0505*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0544*		mg/kg wet	*0.05000*		*109*	*70-130*			
Surrogate: Toluene-d8	*0.0495*		mg/kg wet	*0.05000*		*99*	*70-130*			
Batch CL71816 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
Surrogate: 1,2-Dichloroethane-d4	*0.0597*		mg/kg wet	*0.05000*		*119*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0481*		mg/kg wet	*0.05000*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0568*		mg/kg wet	*0.05000*		*114*	*70-130*			
Surrogate: Toluene-d8	*0.0481*		mg/kg wet	*0.05000*		*96*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
1,1,1-Trichloroethane	0.0650	0.0050	mg/kg wet	0.05000		130	70-130			
1,1,2,2-Tetrachloroethane	0.0510	0.0020	mg/kg wet	0.05000		102	70-130			
1,1,2-Trichloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
1,1-Dichloroethene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloropropene	0.0592	0.0050	mg/kg wet	0.05000		118	70-130			
1,2,3-Trichlorobenzene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,2,3-Trichloropropane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
1,2,4-Trichlorobenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,2,4-Trimethylbenzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
1,2-Dibromo-3-Chloropropane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dibromoethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dichlorobenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dichloroethane	0.0603	0.0050	mg/kg wet	0.05000		121	70-130			
1,2-Dichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
1,3,5-Trimethylbenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
1,3-Dichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
1,3-Dichloropropane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
1,4-Dichlorobenzene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
1,4-Dioxane	0.950	0.100	mg/kg wet	1.000		95	70-130			
2,2-Dichloropropane	0.0631	0.0050	mg/kg wet	0.05000		126	70-130			
2-Butanone	0.275	0.0100	mg/kg wet	0.2500		110	70-130			
2-Chlorotoluene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
2-Hexanone	0.222	0.0100	mg/kg wet	0.2500		89	70-130			
4-Chlorotoluene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
4-Isopropyltoluene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
4-Methyl-2-Pentanone	0.240	0.0100	mg/kg wet	0.2500		96	70-130			
Acetone	0.279	0.0100	mg/kg wet	0.2500		112	70-130			
Benzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Bromobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Bromochloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromodichloromethane	0.0635	0.0050	mg/kg wet	0.05000		127	70-130			
Bromoform	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
Bromomethane	0.0670	0.0100	mg/kg wet	0.05000		134	70-130			B+
Carbon Disulfide	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
Carbon Tetrachloride	0.0628	0.0050	mg/kg wet	0.05000		126	70-130			
Chlorobenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Chloroethane	0.0541	0.0100	mg/kg wet	0.05000		108	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
Chloroform	0.0568	0.0050	mg/kg wet	0.05000		114	70-130			
Chloromethane	0.0637	0.0100	mg/kg wet	0.05000		127	70-130			
cis-1,2-Dichloroethene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
cis-1,3-Dichloropropene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromochloromethane	0.0504	0.0020	mg/kg wet	0.05000		101	70-130			
Dibromomethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Dichlorodifluoromethane	0.0615	0.0100	mg/kg wet	0.05000		123	70-130			
Diethyl Ether	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Di-isopropyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Ethylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Hexachlorobutadiene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130			
Isopropylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Methyl tert-Butyl Ether	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
Methylene Chloride	0.0554	0.0100	mg/kg wet	0.05000		111	70-130			
Naphthalene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
n-Butylbenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
n-Propylbenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
sec-Butylbenzene	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
Styrene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
tert-Butylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Tertiary-amyl methyl ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Tetrachloroethene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Tetrahydrofuran	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
Toluene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
trans-1,2-Dichloroethene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,3-Dichloropropene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Trichloroethene	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Trichlorofluoromethane	0.0618	0.0050	mg/kg wet	0.05000		124	70-130			
Vinyl Chloride	0.0640	0.0100	mg/kg wet	0.05000		128	70-130			
Xylene O	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Xylene P,M	0.102	0.0100	mg/kg wet	0.1000		102	70-130			
Xylenes (Total)	0.154	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0593*		mg/kg wet	*0.05000*		*119*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0511*		mg/kg wet	*0.05000*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0561*		mg/kg wet	*0.05000*		*112*	*70-130*			
Surrogate: Toluene-d8	*0.0477*		mg/kg wet	*0.05000*		*95*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	1	20	
1,1,1-Trichloroethane	0.0611	0.0050	mg/kg wet	0.05000		122	70-130	6	20	
1,1,2,2-Tetrachloroethane	0.0496	0.0020	mg/kg wet	0.05000		99	70-130	3	20	
1,1,2-Trichloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	4	20	
1,1-Dichloroethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
1,1-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
1,1-Dichloropropene	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	4	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
1,2,3-Trichlorobenzene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	1	20	
1,2,3-Trichloropropane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	1	20	
1,2,4-Trichlorobenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	0.4	20	
1,2,4-Trimethylbenzene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	2	20	
1,2-Dibromo-3-Chloropropane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	20	
1,2-Dibromoethane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	3	20	
1,2-Dichlorobenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	1	20	
1,2-Dichloroethane	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	4	20	
1,2-Dichloropropane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	3	20	
1,3,5-Trimethylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	2	20	
1,3-Dichlorobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	0.2	20	
1,3-Dichloropropane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	2	20	
1,4-Dichlorobenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	20	
1,4-Dioxane	0.947	0.100	mg/kg wet	1.000		95	70-130	0.4	20	
2,2-Dichloropropane	0.0603	0.0050	mg/kg wet	0.05000		121	70-130	5	20	
2-Butanone	0.263	0.0100	mg/kg wet	0.2500		105	70-130	4	20	
2-Chlorotoluene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	20	
2-Hexanone	0.227	0.0100	mg/kg wet	0.2500		91	70-130	2	20	
4-Chlorotoluene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	2	20	
4-Isopropyltoluene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
4-Methyl-2-Pentanone	0.232	0.0100	mg/kg wet	0.2500		93	70-130	3	20	
Acetone	0.271	0.0100	mg/kg wet	0.2500		108	70-130	3	20	
Benzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	4	20	
Bromobenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	1	20	
Bromochloromethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
Bromodichloromethane	0.0603	0.0050	mg/kg wet	0.05000		121	70-130	5	20	
Bromoform	0.0583	0.0050	mg/kg wet	0.05000		117	70-130	3	20	
Bromomethane	0.0598	0.0100	mg/kg wet	0.05000		120	70-130	11	20	
Carbon Disulfide	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	5	20	
Carbon Tetrachloride	0.0592	0.0050	mg/kg wet	0.05000		118	70-130	6	20	
Chlorobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	1	20	
Chloroethane	0.0526	0.0100	mg/kg wet	0.05000		105	70-130	3	20	
Chloroform	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	4	20	
Chloromethane	0.0610	0.0100	mg/kg wet	0.05000		122	70-130	4	20	
cis-1,2-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	5	20	
cis-1,3-Dichloropropene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	2	20	
Dibromochloromethane	0.0508	0.0020	mg/kg wet	0.05000		102	70-130	0.8	20	
Dibromomethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	4	20	
Dichlorodifluoromethane	0.0580	0.0100	mg/kg wet	0.05000		116	70-130	6	20	
Diethyl Ether	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	2	20	
Di-isopropyl ether	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	2	20	
Ethyl tertiary-butyl ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	2	20	
Ethylbenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
Hexachlorobutadiene	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	2	20	
Isopropylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	1	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CL71816 - 5035										
Methyl tert-Butyl Ether	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
Methylene Chloride	0.0534	0.0100	mg/kg wet	0.05000		107	70-130	4	20	
Naphthalene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	1	20	
n-Butylbenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
n-Propylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	1	20	
sec-Butylbenzene	0.0415	0.0050	mg/kg wet	0.05000		83	70-130	1	20	
Styrene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	2	20	
tert-Butylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	0.5	20	
Tertiary-amyl methyl ether	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	20	
Tetrahydrofuran	0.0425	0.0050	mg/kg wet	0.05000		85	70-130	2	20	
Toluene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	4	20	
trans-1,2-Dichloroethene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	2	20	
trans-1,3-Dichloropropene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	3	20	
Trichloroethene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	5	20	
Trichlorofluoromethane	0.0583	0.0050	mg/kg wet	0.05000		117	70-130	6	20	
Vinyl Chloride	0.0608	0.0100	mg/kg wet	0.05000		122	70-130	5	20	
Xylene O	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	2	20	
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130	2	20	
Xylenes (Total)	0.157	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0585*		mg/kg wet	*0.05000*		*117*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0535*		mg/kg wet	*0.05000*		*107*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0555*		mg/kg wet	*0.05000*		*111*	*70-130*			
Surrogate: Toluene-d8	*0.0503*		mg/kg wet	*0.05000*		*101*	*70-130*			
8081B Organochlorine Pesticides										
Batch CL71508 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71508 - 3546										
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0128*		mg/kg wet	*0.01250*		*103*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0141*		mg/kg wet	*0.01250*		*113*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00982*		mg/kg wet	*0.01250*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0113*		mg/kg wet	*0.01250*		*91*	*30-150*			
LCS										
4,4´-DDD	0.0098	0.0025	mg/kg wet	0.01250		78	40-140			
4,4´-DDD [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
4,4´-DDE	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
4,4´-DDE [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
4,4´-DDT	0.0092	0.0025	mg/kg wet	0.01250		74	40-140			
4,4´-DDT [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Aldrin	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Aldrin [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
alpha-BHC	0.0098	0.0025	mg/kg wet	0.01250		78	40-140			
alpha-BHC [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
alpha-Chlordane	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
alpha-Chlordane [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
beta-BHC	0.0091	0.0025	mg/kg wet	0.01250		73	40-140			
beta-BHC [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
delta-BHC	0.0099	0.0025	mg/kg wet	0.01250		79	40-140			
delta-BHC [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71508 - 3546										
Dieldrin	0.0106	0.0025	mg/kg wet	0.01250		84	40-140			
Dieldrin [2C]	0.0123	0.0025	mg/kg wet	0.01250		99	40-140			
Endosulfan I	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Endosulfan I [2C]	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan II	0.0096	0.0025	mg/kg wet	0.01250		77	40-140			
Endosulfan II [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Endosulfan Sulfate	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
Endosulfan Sulfate [2C]	0.0113	0.0025	mg/kg wet	0.01250		91	40-140			
Endrin	0.0101	0.0025	mg/kg wet	0.01250		81	40-140			
Endrin [2C]	0.0118	0.0025	mg/kg wet	0.01250		95	40-140			
Endrin Ketone	0.0101	0.0025	mg/kg wet	0.01250		81	40-140			
Endrin Ketone [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
gamma-BHC (Lindane)	0.0097	0.0015	mg/kg wet	0.01250		77	40-140			
gamma-BHC (Lindane) [2C]	0.0117	0.0015	mg/kg wet	0.01250		93	40-140			
gamma-Chlordane	0.0097	0.0025	mg/kg wet	0.01250		78	40-140			
gamma-Chlordane [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Heptachlor	0.0095	0.0025	mg/kg wet	0.01250		76	40-140			
Heptachlor [2C]	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
Heptachlor Epoxide	0.0102	0.0025	mg/kg wet	0.01250		81	40-140			
Heptachlor Epoxide [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
Hexachlorobenzene	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Hexachlorobenzene [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140			
Methoxychlor	0.0090	0.0025	mg/kg wet	0.01250		72	40-140			
Methoxychlor [2C]	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
Surrogate: Decachlorobiphenyl	*0.0125*		mg/kg wet	*0.01250*		*100*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0143*		mg/kg wet	*0.01250*		*114*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.00990*		mg/kg wet	*0.01250*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0116*		mg/kg wet	*0.01250*		*93*	*30-150*			
LCS Dup										
4,4´-DDD	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	6	30	
4,4´-DDD [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	5	30	
4,4´-DDE	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	6	30	
4,4´-DDE [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	5	30	
4,4´-DDT	0.0099	0.0025	mg/kg wet	0.01250		80	40-140	8	30	
4,4´-DDT [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	6	30	
Aldrin	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	5	30	
Aldrin [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	5	30	
alpha-BHC	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	6	30	
alpha-BHC [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	5	30	
alpha-Chlordane	0.0103	0.0025	mg/kg wet	0.01250		82	40-140	6	30	
alpha-Chlordane [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
beta-BHC	0.0091	0.0025	mg/kg wet	0.01250		73	40-140	0.6	30	
beta-BHC [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	3	30	
delta-BHC	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	6	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL71508 - 3546										
delta-BHC [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	5	30	
Dieldrin	0.0112	0.0025	mg/kg wet	0.01250		89	40-140	6	30	
Dieldrin [2C]	0.0130	0.0025	mg/kg wet	0.01250		104	40-140	5	30	
Endosulfan I	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	5	30	
Endosulfan I [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	5	30	
Endosulfan II	0.0102	0.0025	mg/kg wet	0.01250		82	40-140	6	30	
Endosulfan II [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
Endosulfan Sulfate	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	9	30	
Endosulfan Sulfate [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
Endrin	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	6	30	
Endrin [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140	5	30	
Endrin Ketone	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	8	30	
Endrin Ketone [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	5	30	
gamma-BHC (Lindane)	0.0102	0.0015	mg/kg wet	0.01250		82	40-140	6	30	
gamma-BHC (Lindane) [2C]	0.0122	0.0015	mg/kg wet	0.01250		97	40-140	4	30	
gamma-Chlordane	0.0103	0.0025	mg/kg wet	0.01250		83	40-140	6	30	
gamma-Chlordane [2C]	0.0122	0.0025	mg/kg wet	0.01250		97	40-140	5	30	
Heptachlor	0.0100	0.0025	mg/kg wet	0.01250		80	40-140	6	30	
Heptachlor [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	5	30	
Heptachlor Epoxide	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	6	30	
Heptachlor Epoxide [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	5	30	
Hexachlorobenzene	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	4	30	
Hexachlorobenzene [2C]	0.0127	0.0025	mg/kg wet	0.01250		102	40-140	3	30	
Methoxychlor	0.0098	0.0025	mg/kg wet	0.01250		79	40-140	9	30	
Methoxychlor [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	7	30	
Surrogate: Decachlorobiphenyl	*0.0132*		mg/kg wet	*0.01250*		*105*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0147*		mg/kg wet	*0.01250*		*117*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0100*		mg/kg wet	*0.01250*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71502 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CL71502 - 3540C										
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0204*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0219*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0192*		mg/kg wet	*0.02500*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0200*		mg/kg wet	*0.02500*		*80*	*30-150*			
LCS										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		85	40-140			
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		90	40-140			
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		86	40-140			
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		82	40-140			
Surrogate: Decachlorobiphenyl	*0.0220*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0227*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0200*		mg/kg wet	*0.02500*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
LCS Dup										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		82	40-140	4	30	
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		86	40-140	4	30	
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		84	40-140	3	30	
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		89	40-140	9	30	
Surrogate: Decachlorobiphenyl	*0.0217*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0192*		mg/kg wet	*0.02500*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0195*		mg/kg wet	*0.02500*		*78*	*30-150*			
8151A Chlorinated Herbicides										
Batch CL71801 - 3546										
Blank										
2,4,5-T	ND	0.010	mg/kg wet							
2,4,5-T [2C]	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex)	ND	0.010	mg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	0.010	mg/kg wet							
2,4-D	ND	0.047	mg/kg wet							
2,4-D [2C]	ND	0.047	mg/kg wet							
2,4-DB	ND	0.048	mg/kg wet							
2,4-DB [2C]	ND	0.048	mg/kg wet							
Dalapon	ND	0.046	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL71801 - 3546										
Dalapon [2C]	ND	0.046	mg/kg wet							
Dicamba	ND	0.009	mg/kg wet							
Dicamba [2C]	ND	0.009	mg/kg wet							
Dichlorprop	ND	0.047	mg/kg wet							
Dichlorprop [2C]	ND	0.047	mg/kg wet							
Dinoseb	ND	0.048	mg/kg wet							
Dinoseb [2C]	ND	0.048	mg/kg wet							
MCPA	ND	2.32	mg/kg wet							
MCPA [2C]	ND	2.32	mg/kg wet							
MCPP	ND	2.35	mg/kg wet							
MCPP [2C]	ND	2.35	mg/kg wet							
Surrogate: DCAA	*0.171*		mg/kg wet	*0.2000*		*85*	*30-150*			
Surrogate: DCAA [2C]	*0.176*		mg/kg wet	*0.2000*		*88*	*30-150*			
LCS										
2,4,5-T	0.014	0.010	mg/kg wet	0.01900		74	40-140			
2,4,5-T [2C]	0.014	0.010	mg/kg wet	0.01900		74	40-140			
2,4,5-TP (Silvex)	0.015	0.010	mg/kg wet	0.01900		80	40-140			
2,4,5-TP (Silvex) [2C]	0.015	0.010	mg/kg wet	0.01900		78	40-140			
2,4-D	0.130	0.047	mg/kg wet	0.1880		69	40-140			
2,4-D [2C]	0.148	0.047	mg/kg wet	0.1880		79	40-140			
2,4-DB	0.149	0.048	mg/kg wet	0.1900		78	40-140			
2,4-DB [2C]	0.146	0.048	mg/kg wet	0.1900		77	40-140			
Dalapon	0.304	0.046	mg/kg wet	0.4550		67	40-140			
Dalapon [2C]	0.385	0.046	mg/kg wet	0.4550		85	40-140			
Dicamba	0.017	0.009	mg/kg wet	0.01880		88	40-140			
Dicamba [2C]	0.016	0.009	mg/kg wet	0.01880		86	40-140			
Dichlorprop	0.157	0.047	mg/kg wet	0.1880		83	40-140			
Dichlorprop [2C]	0.160	0.047	mg/kg wet	0.1880		85	40-140			
Dinoseb	0.011	0.048	mg/kg wet	0.09500		11	10-100			
Dinoseb [2C]	0.011	0.048	mg/kg wet	0.09500		12	10-100			
MCPA	17.1	2.32	mg/kg wet	18.60		92	40-140			
MCPA [2C]	14.5	2.32	mg/kg wet	18.60		78	40-140			
MCPP	14.4	2.35	mg/kg wet	18.80		76	40-140			
MCPP [2C]	16.2	2.35	mg/kg wet	18.80		86	40-140			
Surrogate: DCAA	*0.175*		mg/kg wet	*0.2000*		*87*	*30-150*			
Surrogate: DCAA [2C]	*0.182*		mg/kg wet	*0.2000*		*91*	*30-150*			
LCS Dup										
2,4,5-T	0.017	0.010	mg/kg wet	0.01900		88	40-140	17	30	
2,4,5-T [2C]	0.016	0.010	mg/kg wet	0.01900		86	40-140	15	30	
2,4,5-TP (Silvex)	0.017	0.010	mg/kg wet	0.01900		92	40-140	14	30	
2,4,5-TP (Silvex) [2C]	0.017	0.010	mg/kg wet	0.01900		88	40-140	12	30	
2,4-D	0.149	0.047	mg/kg wet	0.1880		79	40-140	14	30	
2,4-D [2C]	0.156	0.047	mg/kg wet	0.1880		83	40-140	5	30	
2,4-DB	0.168	0.048	mg/kg wet	0.1900		88	40-140	12	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8151A Chlorinated Herbicides										
Batch CL71801 - 3546										
2,4-DB [2C]	0.170	0.048	mg/kg wet	0.1900		89	40-140	15	30	
Dalapon	0.345	0.046	mg/kg wet	0.4550		76	40-140	13	30	
Dalapon [2C]	0.419	0.046	mg/kg wet	0.4550		92	40-140	8	30	
Dicamba	0.017	0.009	mg/kg wet	0.01880		90	40-140	2	30	
Dicamba [2C]	0.018	0.009	mg/kg wet	0.01880		96	40-140	11	30	
Dichlorprop	0.179	0.047	mg/kg wet	0.1880		95	40-140	13	30	
Dichlorprop [2C]	0.184	0.047	mg/kg wet	0.1880		98	40-140	14	30	
Dinoseb	0.012	0.048	mg/kg wet	0.09500		13	10-100	13	30	
Dinoseb [2C]	0.012	0.048	mg/kg wet	0.09500		13	10-100	6	30	
MCPA	17.3	2.32	mg/kg wet	18.60		93	40-140	1	30	
MCPA [2C]	16.8	2.32	mg/kg wet	18.60		90	40-140	15	30	
MCPP	16.7	2.35	mg/kg wet	18.80		89	40-140	15	30	
MCPP [2C]	17.1	2.35	mg/kg wet	18.80		91	40-140	5	30	
Surrogate: DCAA	*0.184*		mg/kg wet	*0.2000*		*92*	*30-150*			
Surrogate: DCAA [2C]	*0.193*		mg/kg wet	*0.2000*		*97*	*30-150*			
8270D Semi-Volatile Organic Compounds										
Batch CL71407 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71407 - 3546										
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.15*		mg/kg wet	*3.333*		*64*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.42*		mg/kg wet	*5.000*		*68*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.20*		mg/kg wet	*5.000*		*64*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.40*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: 2-Fluorophenol	*2.85*		mg/kg wet	*5.000*		*57*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.23*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: Phenol-d6	*2.96*		mg/kg wet	*5.000*		*59*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.84*		mg/kg wet	*3.333*		*85*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.99	0.333	mg/kg wet	3.333		90	40-140			
1,2-Dichlorobenzene	2.66	0.333	mg/kg wet	3.333		80	40-140			
1,3-Dichlorobenzene	2.63	0.333	mg/kg wet	3.333		79	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71407 - 3546										
1,4-Dichlorobenzene	2.64	0.333	mg/kg wet	3.333		79	40-140			
2,4,5-Trichlorophenol	3.20	0.333	mg/kg wet	3.333		96	30-130			
2,4,6-Trichlorophenol	3.36	0.333	mg/kg wet	3.333		101	30-130			
2,4-Dichlorophenol	3.03	0.333	mg/kg wet	3.333		91	30-130			
2,4-Dimethylphenol	2.68	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dinitrophenol	3.08	1.67	mg/kg wet	3.333		92	30-130			
2,4-Dinitrotoluene	2.46	0.333	mg/kg wet	3.333		74	40-140			
2,6-Dinitrotoluene	2.65	0.333	mg/kg wet	3.333		80	40-140			
2-Chloronaphthalene	2.66	0.333	mg/kg wet	3.333		80	40-140			
2-Chlorophenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
2-Methylnaphthalene	2.83	0.333	mg/kg wet	3.333		85	40-140			
2-Methylphenol	2.82	0.333	mg/kg wet	3.333		85	30-130			
2-Nitrophenol	3.03	0.333	mg/kg wet	3.333		91	30-130			
3,3´-Dichlorobenzidine	2.67	0.667	mg/kg wet	3.333		80	40-140			
3+4-Methylphenol	5.19	0.667	mg/kg wet	6.667		78	30-130			
4-Bromophenyl-phenylether	3.70	0.333	mg/kg wet	3.333		111	40-140			
4-Chloroaniline	1.68	0.667	mg/kg wet	3.333		50	40-140			
4-Nitrophenol	2.00	1.67	mg/kg wet	3.333		60	30-130			
Acenaphthene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Acenaphthylene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Acetophenone	2.55	0.667	mg/kg wet	3.333		76	40-140			
Aniline	1.97	1.67	mg/kg wet	3.333		59	40-140			
Anthracene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Azobenzene	3.08	0.333	mg/kg wet	3.333		92	40-140			
Benzo(a)anthracene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzo(g,h,i)perylene	3.74	0.333	mg/kg wet	3.333		112	40-140			
Benzo(k)fluoranthene	3.14	0.333	mg/kg wet	3.333		94	40-140			
bis(2-Chloroethoxy)methane	2.64	0.333	mg/kg wet	3.333		79	40-140			
bis(2-Chloroethyl)ether	2.36	0.333	mg/kg wet	3.333		71	40-140			
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140			
bis(2-Ethylhexyl)phthalate	3.47	0.333	mg/kg wet	3.333		104	40-140			
Butylbenzylphthalate	3.25	0.333	mg/kg wet	3.333		98	40-140			
Chrysene	3.17	0.167	mg/kg wet	3.333		95	40-140			
Dibenzo(a,h)Anthracene	3.67	0.167	mg/kg wet	3.333		110	40-140			
Dibenzofuran	2.67	0.333	mg/kg wet	3.333		80	40-140			
Diethylphthalate	2.64	0.333	mg/kg wet	3.333		79	40-140			
Dimethylphthalate	2.78	0.333	mg/kg wet	3.333		83	40-140			
Di-n-butylphthalate	2.94	0.333	mg/kg wet	3.333		88	40-140			
Di-n-octylphthalate	3.29	0.333	mg/kg wet	3.333		99	40-140			
Fluoranthene	2.63	0.333	mg/kg wet	3.333		79	40-140			
Fluorene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Hexachlorobenzene	3.62	0.333	mg/kg wet	3.333		109	40-140			
Hexachlorobutadiene	3.20	0.333	mg/kg wet	3.333		96	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

8270D Semi-Volatile Organic Compounds

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CL71407 - 3546										
Hexachloroethane	2.60	0.333	mg/kg wet	3.333		78	40-140			
Indeno(1,2,3-cd)Pyrene	3.63	0.333	mg/kg wet	3.333		109	40-140			
Isophorone	2.34	0.333	mg/kg wet	3.333		70	40-140			
Naphthalene	2.75	0.333	mg/kg wet	3.333		83	40-140			
Nitrobenzene	2.40	0.333	mg/kg wet	3.333		72	40-140			
N-Nitrosodimethylamine	1.80	0.333	mg/kg wet	3.333		54	40-140			
Pentachlorophenol	3.30	1.67	mg/kg wet	3.333		99	30-130			
Phenanthrene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Phenol	2.48	0.333	mg/kg wet	3.333		74	30-130			
Pyrene	3.18	0.333	mg/kg wet	3.333		95	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.40*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*5.16*		mg/kg wet	*5.000*		*103*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.78*		mg/kg wet	*5.000*		*76*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.83*		mg/kg wet	*3.333*		*85*	*30-130*			
Surrogate: 2-Fluorophenol	*3.23*		mg/kg wet	*5.000*		*65*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.54*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: Phenol-d6	*3.41*		mg/kg wet	*5.000*		*68*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.94*		mg/kg wet	*3.333*		*88*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.59	0.333	mg/kg wet	3.333		78	40-140	14	30	
1,2-Dichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	13	30	
1,3-Dichlorobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	13	30	
1,4-Dichlorobenzene	2.32	0.333	mg/kg wet	3.333		69	40-140	13	30	
2,4,5-Trichlorophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	11	30	
2,4,6-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130	13	30	
2,4-Dichlorophenol	2.59	0.333	mg/kg wet	3.333		78	30-130	16	30	
2,4-Dimethylphenol	2.36	0.333	mg/kg wet	3.333		71	30-130	13	30	
2,4-Dinitrophenol	2.96	1.67	mg/kg wet	3.333		89	30-130	4	30	
2,4-Dinitrotoluene	2.35	0.333	mg/kg wet	3.333		71	40-140	4	30	
2,6-Dinitrotoluene	2.37	0.333	mg/kg wet	3.333		71	40-140	11	30	
2-Chloronaphthalene	2.37	0.333	mg/kg wet	3.333		71	40-140	11	30	
2-Chlorophenol	2.26	0.333	mg/kg wet	3.333		68	30-130	13	30	
2-Methylnaphthalene	2.40	0.333	mg/kg wet	3.333		72	40-140	17	30	
2-Methylphenol	2.34	0.333	mg/kg wet	3.333		70	30-130	19	30	
2-Nitrophenol	2.65	0.333	mg/kg wet	3.333		79	30-130	14	30	
3,3´-Dichlorobenzidine	2.39	0.667	mg/kg wet	3.333		72	40-140	11	30	
3+4-Methylphenol	4.53	0.667	mg/kg wet	6.667		68	30-130	14	30	
4-Bromophenyl-phenylether	3.09	0.333	mg/kg wet	3.333		93	40-140	18	30	
4-Chloroaniline	1.60	0.667	mg/kg wet	3.333		48	40-140	5	30	
4-Nitrophenol	1.89	1.67	mg/kg wet	3.333		57	30-130	5	30	
Acenaphthene	2.52	0.333	mg/kg wet	3.333		76	40-140	12	30	
Acenaphthylene	2.39	0.333	mg/kg wet	3.333		72	40-140	13	30	
Acetophenone	2.26	0.667	mg/kg wet	3.333		68	40-140	12	30	
Aniline	1.73	1.67	mg/kg wet	3.333		52	40-140	13	30	
Anthracene	2.70	0.333	mg/kg wet	3.333		81	40-140	11	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71407 - 3546										
Azobenzene	2.54	0.333	mg/kg wet	3.333		76	40-140	19	30	
Benzo(a)anthracene	2.65	0.333	mg/kg wet	3.333		80	40-140	11	30	
Benzo(a)pyrene	2.82	0.167	mg/kg wet	3.333		85	40-140	9	30	
Benzo(b)fluoranthene	2.73	0.333	mg/kg wet	3.333		82	40-140	5	30	
Benzo(g,h,i)perylene	3.26	0.333	mg/kg wet	3.333		98	40-140	14	30	
Benzo(k)fluoranthene	2.84	0.333	mg/kg wet	3.333		85	40-140	10	30	
bis(2-Chloroethoxy)methane	2.28	0.333	mg/kg wet	3.333		68	40-140	15	30	
bis(2-Chloroethyl)ether	2.08	0.333	mg/kg wet	3.333		62	40-140	13	30	
bis(2-chloroisopropyl)Ether	2.21	0.333	mg/kg wet	3.333		66	40-140	15	30	
bis(2-Ethylhexyl)phthalate	3.20	0.333	mg/kg wet	3.333		96	40-140	8	30	
Butylbenzylphthalate	2.99	0.333	mg/kg wet	3.333		90	40-140	8	30	
Chrysene	2.85	0.167	mg/kg wet	3.333		85	40-140	11	30	
Dibenzo(a,h)Anthracene	3.23	0.167	mg/kg wet	3.333		97	40-140	13	30	
Dibenzofuran	2.37	0.333	mg/kg wet	3.333		71	40-140	12	30	
Diethylphthalate	2.39	0.333	mg/kg wet	3.333		72	40-140	10	30	
Dimethylphthalate	2.45	0.333	mg/kg wet	3.333		74	40-140	12	30	
Di-n-butylphthalate	2.82	0.333	mg/kg wet	3.333		85	40-140	4	30	
Di-n-octylphthalate	3.17	0.333	mg/kg wet	3.333		95	40-140	4	30	
Fluoranthene	2.58	0.333	mg/kg wet	3.333		77	40-140	2	30	
Fluorene	2.52	0.333	mg/kg wet	3.333		76	40-140	11	30	
Hexachlorobenzene	3.08	0.333	mg/kg wet	3.333		92	40-140	16	30	
Hexachlorobutadiene	2.78	0.333	mg/kg wet	3.333		83	40-140	14	30	
Hexachloroethane	2.27	0.333	mg/kg wet	3.333		68	40-140	13	30	
Indeno(1,2,3-cd)Pyrene	3.24	0.333	mg/kg wet	3.333		97	40-140	11	30	
Isophorone	2.01	0.333	mg/kg wet	3.333		60	40-140	15	30	
Naphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140	13	30	
Nitrobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	7	30	
N-Nitrosodimethylamine	1.54	0.333	mg/kg wet	3.333		46	40-140	16	30	
Pentachlorophenol	2.78	1.67	mg/kg wet	3.333		83	30-130	17	30	
Phenanthrene	2.62	0.333	mg/kg wet	3.333		78	40-140	12	30	
Phenol	2.06	0.333	mg/kg wet	3.333		62	30-130	19	30	
Pyrene	2.80	0.333	mg/kg wet	3.333		84	40-140	13	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.21*		mg/kg wet	*3.333*		*66*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.73*		mg/kg wet	*5.000*		*95*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.64*		mg/kg wet	*3.333*		*79*	*30-130*			
Surrogate: 2-Fluorophenol	*2.97*		mg/kg wet	*5.000*		*59*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.35*		mg/kg wet	*3.333*		*71*	*30-130*			
Surrogate: Phenol-d6	*3.17*		mg/kg wet	*5.000*		*63*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.87*		mg/kg wet	*3.333*		*86*	*30-130*			
Batch CL71507 - 3546										
Blank										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*1.91*		mg/kg wet	*3.333*		*57*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.18*		mg/kg wet	*5.000*		*64*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*2.93*		mg/kg wet	*5.000*		*59*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.02*		mg/kg wet	*3.333*		*60*	*30-130*			
Surrogate: 2-Fluorophenol	*2.61*		mg/kg wet	*5.000*		*52*	*30-130*			
Surrogate: Nitrobenzene-d5	*1.93*		mg/kg wet	*3.333*		*58*	*30-130*			
Surrogate: Phenol-d6	*2.77*		mg/kg wet	*5.000*		*55*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.98*		mg/kg wet	*3.333*		*89*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140			
1,2-Dichlorobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140			
1,3-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140			
1,4-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140			
2,4,5-Trichlorophenol	3.11	0.333	mg/kg wet	3.333		93	30-130			
2,4,6-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dichlorophenol	2.50	0.333	mg/kg wet	3.333		75	30-130			
2,4-Dimethylphenol	2.22	0.333	mg/kg wet	3.333		66	30-130			
2,4-Dinitrophenol	3.35	1.67	mg/kg wet	3.333		101	30-130			
2,4-Dinitrotoluene	3.04	0.333	mg/kg wet	3.333		91	40-140			
2,6-Dinitrotoluene	2.82	0.333	mg/kg wet	3.333		85	40-140			
2-Chloronaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Chlorophenol	2.02	0.333	mg/kg wet	3.333		61	30-130			
2-Methylnaphthalene	2.29	0.333	mg/kg wet	3.333		69	40-140			
2-Methylphenol	2.39	0.333	mg/kg wet	3.333		72	30-130			
2-Nitrophenol	2.34	0.333	mg/kg wet	3.333		70	30-130			
3,3´-Dichlorobenzidine	2.36	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.47	0.667	mg/kg wet	6.667		67	30-130			
4-Bromophenyl-phenylether	2.99	0.333	mg/kg wet	3.333		90	40-140			
4-Chloroaniline	1.89	0.667	mg/kg wet	3.333		57	40-140			
4-Nitrophenol	2.55	1.67	mg/kg wet	3.333		77	30-130			
Acenaphthene	2.53	0.333	mg/kg wet	3.333		76	40-140			
Acenaphthylene	2.38	0.333	mg/kg wet	3.333		72	40-140			
Acetophenone	2.06	0.667	mg/kg wet	3.333		62	40-140			
Aniline	1.61	1.67	mg/kg wet	3.333		48	40-140			
Anthracene	2.87	0.333	mg/kg wet	3.333		86	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
Azobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140			
Benzo(a)anthracene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Benzo(a)pyrene	2.83	0.167	mg/kg wet	3.333		85	40-140			
Benzo(b)fluoranthene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Benzo(g,h,i)perylene	3.21	0.333	mg/kg wet	3.333		96	40-140			
Benzo(k)fluoranthene	3.09	0.333	mg/kg wet	3.333		93	40-140			
bis(2-Chloroethoxy)methane	2.07	0.333	mg/kg wet	3.333		62	40-140			
bis(2-Chloroethyl)ether	1.82	0.333	mg/kg wet	3.333		55	40-140			
bis(2-chloroisopropyl)Ether	1.96	0.333	mg/kg wet	3.333		59	40-140			
bis(2-Ethylhexyl)phthalate	3.25	0.333	mg/kg wet	3.333		97	40-140			
Butylbenzylphthalate	3.01	0.333	mg/kg wet	3.333		90	40-140			
Chrysene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	3.12	0.167	mg/kg wet	3.333		93	40-140			
Dibenzofuran	2.53	0.333	mg/kg wet	3.333		76	40-140			
Diethylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140			
Dimethylphthalate	2.87	0.333	mg/kg wet	3.333		86	40-140			
Di-n-butylphthalate	3.16	0.333	mg/kg wet	3.333		95	40-140			
Di-n-octylphthalate	3.48	0.333	mg/kg wet	3.333		104	40-140			
Fluoranthene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Fluorene	2.95	0.333	mg/kg wet	3.333		88	40-140			
Hexachlorobenzene	3.04	0.333	mg/kg wet	3.333		91	40-140			
Hexachlorobutadiene	2.42	0.333	mg/kg wet	3.333		73	40-140			
Hexachloroethane	2.04	0.333	mg/kg wet	3.333		61	40-140			
Indeno(1,2,3-cd)Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	1.89	0.333	mg/kg wet	3.333		57	40-140			
Naphthalene	2.19	0.333	mg/kg wet	3.333		66	40-140			
Nitrobenzene	1.99	0.333	mg/kg wet	3.333		60	40-140			
N-Nitrosodimethylamine	1.48	0.333	mg/kg wet	3.333		45	40-140			
Pentachlorophenol	3.24	1.67	mg/kg wet	3.333		97	30-130			
Phenanthrene	2.78	0.333	mg/kg wet	3.333		84	40-140			
Phenol	1.93	0.333	mg/kg wet	3.333		58	30-130			
Pyrene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.10*		mg/kg wet	*3.333*		*63*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*5.00*		mg/kg wet	*5.000*		*100*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.29*		mg/kg wet	*5.000*		*66*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.42*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2-Fluorophenol	*2.92*		mg/kg wet	*5.000*		*58*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.20*		mg/kg wet	*3.333*		*66*	*30-130*			
Surrogate: Phenol-d6	*3.01*		mg/kg wet	*5.000*		*60*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.08*		mg/kg wet	*3.333*		*92*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	5	30	
1,2-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		67	40-140	5	30	
1,3-Dichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	5	30	
1,4-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		67	40-140	6	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
2,4,5-Trichlorophenol	3.17	0.333	mg/kg wet	3.333		95	30-130	2	30	
2,4,6-Trichlorophenol	3.04	0.333	mg/kg wet	3.333		91	30-130	3	30	
2,4-Dichlorophenol	2.66	0.333	mg/kg wet	3.333		80	30-130	6	30	
2,4-Dimethylphenol	2.41	0.333	mg/kg wet	3.333		72	30-130	9	30	
2,4-Dinitrophenol	3.59	1.67	mg/kg wet	3.333		108	30-130	7	30	
2,4-Dinitrotoluene	3.13	0.333	mg/kg wet	3.333		94	40-140	3	30	
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		87	40-140	2	30	
2-Chloronaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	6	30	
2-Chlorophenol	2.14	0.333	mg/kg wet	3.333		64	30-130	6	30	
2-Methylnaphthalene	2.43	0.333	mg/kg wet	3.333		73	40-140	6	30	
2-Methylphenol	2.38	0.333	mg/kg wet	3.333		72	30-130	0.3	30	
2-Nitrophenol	2.51	0.333	mg/kg wet	3.333		75	30-130	7	30	
3,3´-Dichlorobenzidine	2.25	0.667	mg/kg wet	3.333		68	40-140	5	30	
3+4-Methylphenol	4.77	0.667	mg/kg wet	6.667		72	30-130	7	30	
4-Bromophenyl-phenylether	3.01	0.333	mg/kg wet	3.333		90	40-140	0.6	30	
4-Chloroaniline	1.92	0.667	mg/kg wet	3.333		58	40-140	2	30	
4-Nitrophenol	2.71	1.67	mg/kg wet	3.333		81	30-130	6	30	
Acenaphthene	2.61	0.333	mg/kg wet	3.333		78	40-140	3	30	
Acenaphthylene	2.46	0.333	mg/kg wet	3.333		74	40-140	3	30	
Acetophenone	2.19	0.667	mg/kg wet	3.333		66	40-140	6	30	
Aniline	1.45	1.67	mg/kg wet	3.333		44	40-140	10	30	
Anthracene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Azobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	0.8	30	
Benzo(a)anthracene	2.71	0.333	mg/kg wet	3.333		81	40-140	2	30	
Benzo(a)pyrene	2.87	0.167	mg/kg wet	3.333		86	40-140	1	30	
Benzo(b)fluoranthene	2.91	0.333	mg/kg wet	3.333		87	40-140	5	30	
Benzo(g,h,i)perylene	3.21	0.333	mg/kg wet	3.333		96	40-140	0.06	30	
Benzo(k)fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140	5	30	
bis(2-Chloroethoxy)methane	2.17	0.333	mg/kg wet	3.333		65	40-140	5	30	
bis(2-Chloroethyl)ether	1.90	0.333	mg/kg wet	3.333		57	40-140	4	30	
bis(2-chloroisopropyl)Ether	2.05	0.333	mg/kg wet	3.333		61	40-140	5	30	
bis(2-Ethylhexyl)phthalate	3.31	0.333	mg/kg wet	3.333		99	40-140	2	30	
Butylbenzylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140	2	30	
Chrysene	2.97	0.167	mg/kg wet	3.333		89	40-140	3	30	
Dibenzo(a,h)Anthracene	3.10	0.167	mg/kg wet	3.333		93	40-140	0.4	30	
Dibenzofuran	2.58	0.333	mg/kg wet	3.333		77	40-140	2	30	
Diethylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140	3	30	
Dimethylphthalate	2.91	0.333	mg/kg wet	3.333		87	40-140	1	30	
Di-n-butylphthalate	3.17	0.333	mg/kg wet	3.333		95	40-140	0.1	30	
Di-n-octylphthalate	3.46	0.333	mg/kg wet	3.333		104	40-140	0.5	30	
Fluoranthene	3.13	0.333	mg/kg wet	3.333		94	40-140	2	30	
Fluorene	2.99	0.333	mg/kg wet	3.333		90	40-140	2	30	
Hexachlorobenzene	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Hexachlorobutadiene	2.50	0.333	mg/kg wet	3.333		75	40-140	3	30	
Hexachloroethane	2.16	0.333	mg/kg wet	3.333		65	40-140	6	30	

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL71507 - 3546										
Indeno(1,2,3-cd)Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140	0.1	30	
Isophorone	1.96	0.333	mg/kg wet	3.333		59	40-140	3	30	
Naphthalene	2.27	0.333	mg/kg wet	3.333		68	40-140	4	30	
Nitrobenzene	1.97	0.333	mg/kg wet	3.333		59	40-140	1	30	
N-Nitrosodimethylamine	1.51	0.333	mg/kg wet	3.333		45	40-140	2	30	
Pentachlorophenol	3.50	1.67	mg/kg wet	3.333		105	30-130	8	30	
Phenanthrene	2.82	0.333	mg/kg wet	3.333		85	40-140	1	30	
Phenol	2.04	0.333	mg/kg wet	3.333		61	30-130	5	30	
Pyrene	2.87	0.333	mg/kg wet	3.333		86	40-140	1	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.16*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.92*		mg/kg wet	*5.000*		*98*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.37*		mg/kg wet	*5.000*		*67*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.47*		mg/kg wet	*3.333*		*74*	*30-130*			
Surrogate: 2-Fluorophenol	*2.96*		mg/kg wet	*5.000*		*59*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.22*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: Phenol-d6	*3.12*		mg/kg wet	*5.000*		*62*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.03*		mg/kg wet	*3.333*		*91*	*30-130*			
Classical Chemistry										
Batch CL72151 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	100	mg/kg							
Total Organic Carbon (2)	ND	100	mg/kg							
Total Organic Carbon (Average)	ND	100	mg/kg dry wt							
LCS										
Total Organic Carbon (1)	11500	100	mg/kg	10000		115	80-120			
Total Organic Carbon (2)	11400	100	mg/kg	10000		114	80-120			
Total Organic Carbon (Average)	11400	100	mg/kg dry wt							
LCS Dup										
Total Organic Carbon (1)	9490	100	mg/kg	10000		95	80-120	19	200	
Total Organic Carbon (2)	10500	100	mg/kg	10000		105	80-120	8	200	
Total Organic Carbon (Average)	9970	100	mg/kg dry wt							
Reference										
Total Organic Carbon (Average)	1.50		mg/kg dry wt							

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712347

Notes and Definitions

Z-09	ND
Z-08	See Attached
XH	Peaks found in the retention time window for MCPA did not confirm by GC/MS.
U	Analyte included in the analysis, but not detected
TR	RSD of replicate analysis >25%. Reanalysis produced similar results.
S+	Surrogate recovery(ies) above upper control limit (S+).
RRF	Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration
Q	Calibration required quadratic regression (Q).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
B+	Blank Spike recovery is above upper control limit (B+).
#	Modified result
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

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Report Prepared for:

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ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

Pace Project #: 10414791
Sample Receipt Date: 12/16/2017
Client Project #: 1712347
Client Sub PO #: B02407
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:

Joanne Richardson

December 28, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

Report Prepared Date:

December 28, 2017

Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on eleven samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 44-82%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blanks to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batches using clean reference matrix or sample matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 78-100% with relative percent differences of 0.2-7.8%. These results were within the target ranges for the method. Matrix spikes were prepared with the 12/19/2017 extraction batch using sample material from a separate project; results from these analyses will be provided upon request.

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Report No.....10414791

Appendix A

Sample Management

10414791

ESS Laboratory PACE

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1712347

Turn Time ___ Standard Other **DUE 12/21/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

MA-MCP Navy USACE CT DEP Other_____

Electonic Deliverables ***Excel** Access ***PDF**

Co. Name: **ESS Laboratory**	Project #:	Project Name: **1712347**	
Contact Person: **Shawn Morrell**	Proj. Location:		
Address: **ext 3083**	City , State:	Zip:	PO #: B02407
Tel.	email: smorrell@thielsch.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: Dioxin EPA 8290
	12/14/17	1010	G	S	1712347-01	1	1	AG	001	X
	12/14/17	1015	G	S	1712347-02	1	1	AG	002	X
	12/14/17	1020	G	S	1712347-03	1	1	AG	003	X
	12/14/17	1025	G	S	1712347-04	1	1	AG	004	X
	12/14/17	1030	G	S	1712347-05	1	1	AG	005	X
	12/14/17	1035	G	S	1712347-06	1	1	AG	006	X
	12/14/17	1040	G	S	1712347-07	1	1	AG	007	X
	12/14/17	1045	G	S	1712347-08	1	1	AG	008	X
	12/14/17	1050	G	S	1712347-09	1	1	AG	009	X
	12/14/17	1055	G	S	1712347-10	1	1	AG	010	X
	12/14/17	1100	G	S	1712347-11	1	1	AG	011	X

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present ✓ Yes ____ No

Seals Intact ✓ Yes ____ No NA:____

Cooler Temperature: 4.7

Internal Use Only
[ ] Pickup
[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
12/15/17 1203	UPS		
	Pace 12/16/17 1040		

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

Temp 4.7

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 14Dec2017 Page 1 of 2
	Document No.: **F-MN-L-213-rev.22**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: ESS Laboratory

Project #: WO#: 10414791

10414791

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 1Z0374974445617505

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.6 **Cooler Temp Corrected (°C):** 4.7 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 12/16/17 LO

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☑ Yes	☐ No		7.
Sufficient Volume?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☐ Yes	☑ No		12. there is no time/date on container
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Joanne Richardson **Date:** 12-18-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

10414791 ~~10415275~~ JDD 12-21-17

Report No....10414791_8290FC_DFR

ESS Laboratory PACE

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1712347

Turn Time ___ Standard Other **DUE 12/28/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

MA-MCP Navy USACE CT DEP Other_____

Electonic Deliverables *Excel Access *PDF

Co. Name: ESS Laboratory	Project #:	Project Name: 1712347	
Contact Person: Shawn Morrell	Proj. Location:		
Address: ext 3083	City , State:	Zip:	PO #: B02407
Tel.:	email: smorrell@thielsch.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: Dioxin EPA 8290							
	12/14/17	1040	G	S	1712347-07	1	1	AG		X			007			~~001~~	
	12/14/17	1050	G	S	1712347-09	1	1	AG		X			009			~~002~~	
	12/14/17	1055	G	S	1712347-10	1	1	AG		X			010			~~003~~	
	12/14/17	1100	G	S	1712347-11	1	1	AG		X			011			~~004~~	

JDD 12-21-17

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only
[ ] Pickup
[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
12/21/17 1500	UPS		
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
	PACE 12/21/17 9:40	T=3.0°C	

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 14Dec2017 Page 1 of 2
	Document No.: **F-MN-L-213-rev.22**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: ESS LABORATORY

Project #: WO#: 10414791

10414791

Courier: ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 1Z 037 497 01 4510 3980

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☒ No

Thermometer Used: ☒ 151401163 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.3 **Cooler Temp Corrected (°C):** 3.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** -0.3 **Date and Initials of Person Examining Contents:** ET 12/21/17

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☐ Yes	☒ No		3.
Sampler Name and/or Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☐ Yes	☒ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☐ Yes	☒ No		12. NO DATE ON LABELS & NO TIME ON EITHER COL OR LABELS.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution: Additional volume.

Project Manager Review: Joanne Richardson **Date:** 12-21-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-01			
Lab Sample ID	10414791001			
Filename	U171227C_09			
Injected By	BAL			
Total Amount Extracted	12.6 g	Matrix	Solid	
% Moisture	5.7	Dilution	NA	
Dry Weight Extracted	11.9 g	Collected	12/14/2017	10:10
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171227C_01 & U171227C_19	Extracted	12/18/2017	15:20
Method Blank ID	BLANK-59234	Analyzed	12/27/2017	23:42

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	62
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	58
				1,2,3,7,8-PeCDF-13C	2.00	63
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	67
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	70
				1,2,3,4,7,8-HxCDF-13C	2.00	69
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	70
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	57
				1,2,3,4,7,8-HxCDD-13C	2.00	69
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	57
				1,2,3,4,7,8,9-HpCDF-13C	2.00	52
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	58
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	49
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-02			
Lab Sample ID	10414791002			
Filename	U171227C_10			
Injected By	BAL			
Total Amount Extracted	12.1 g	Matrix	Solid	
% Moisture	6.1	Dilution	NA	
Dry Weight Extracted	11.4 g	Collected	12/14/2017	10:15
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171227C_01 & U171227C_19	Extracted	12/18/2017	15:20
Method Blank ID	BLANK-59234	Analyzed	12/28/2017	00:26

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	67
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	64
				1,2,3,7,8-PeCDF-13C	2.00	67
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	69
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	76
				1,2,3,4,7,8-HxCDF-13C	2.00	66
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	64
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	62
				1,2,3,4,7,8-HxCDD-13C	2.00	67
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	59
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	55
				1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	54
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	66
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-03			
Lab Sample ID	10414791003			
Filename	U171227C_11			
Injected By	BAL			
Total Amount Extracted	12.4 g	Matrix	Solid	
% Moisture	8.0	Dilution	NA	
Dry Weight Extracted	11.4 g	Collected	12/14/2017	10:20
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171227C_01 & U171227C_19	Extracted	12/18/2017	15:20
Method Blank ID	BLANK-59234	Analyzed	12/28/2017	01:10

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	72
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	69
				1,2,3,7,8-PeCDF-13C	2.00	75
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	74
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	82
				1,2,3,4,7,8-HxCDF-13C	2.00	46
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	48
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	68
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	58
				1,2,3,4,7,8-HxCDD-13C	2.00	65
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	55
				1,2,3,4,7,8,9-HpCDF-13C	2.00	56
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	44
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	47
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	74
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-04			
Lab Sample ID	10414791004			
Filename	U171227C_12			
Injected By	BAL			
Total Amount Extracted	12.4 g	Matrix	Solid	
% Moisture	8.4	Dilution	NA	
Dry Weight Extracted	11.4 g	Collected	12/14/2017	10:25
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171227C_01 & U171227C_19	Extracted	12/18/2017	15:20
Method Blank ID	BLANK-59234	Analyzed	12/28/2017	01:53

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	65
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	62
				1,2,3,7,8-PeCDF-13C	2.00	70
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	71
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	82
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	63
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	63
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	59
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	59
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	53
				1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	61
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	50
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	68
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
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Tel: 612-607-1700
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-05			
Lab Sample ID	10414791005			
Filename	U171227C_13			
Injected By	BAL			
Total Amount Extracted	12.5 g	Matrix	Solid	
% Moisture	9.6	Dilution	NA	
Dry Weight Extracted	11.3 g	Collected	12/14/2017	10:30
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171227C_01 & U171227C_19	Extracted	12/18/2017	15:20
Method Blank ID	BLANK-59234	Analyzed	12/28/2017	02:37

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	60
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	58
				1,2,3,7,8-PeCDF-13C	2.00	66
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	73
				1,2,3,4,7,8-HxCDF-13C	2.00	61
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	62
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	63
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	60
				1,2,3,4,7,8-HxCDD-13C	2.00	62
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	58
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	55
				1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	54
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	63
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-06			
Lab Sample ID	10414791006			
Filename	U171227C_14			
Injected By	BAL			
Total Amount Extracted	12.5 g	Matrix	Solid	
% Moisture	6.7	Dilution	NA	
Dry Weight Extracted	11.7 g	Collected	12/14/2017	10:35
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171227C_01 & U171227C_19	Extracted	12/18/2017	15:20
Method Blank ID	BLANK-59234	Analyzed	12/28/2017	03:21

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	60
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	58
				1,2,3,7,8-PeCDF-13C	2.00	66
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	75
				1,2,3,4,7,8-HxCDF-13C	2.00	62
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	61
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	64
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	62
				1,2,3,4,7,8-HxCDD-13C	2.00	62
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	56
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	54
				1,2,3,4,7,8,9-HpCDF-13C	2.00	54
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	61
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	53
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	64
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-07			
Lab Sample ID	10414791007			
Filename	U171222A_12			
Injected By	CVS			
Total Amount Extracted	11.7 g	Matrix	Solid	
% Moisture	5.9	Dilution	NA	
Dry Weight Extracted	11.0 g	Collected	12/14/2017	10:40
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171222A_05 & U171222A_16	Extracted	12/19/2017	15:00
Method Blank ID	BLANK-59264	Analyzed	12/22/2017	17:50

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	55
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	53
				1,2,3,7,8-PeCDF-13C	2.00	53
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	58
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	63
				1,2,3,4,7,8-HxCDF-13C	2.00	59
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	59
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	62
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	53
				1,2,3,4,7,8-HxCDD-13C	2.00	58
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	55
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	53
				1,2,3,4,7,8,9-HpCDF-13C	2.00	50
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	55
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	46
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	61
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-08			
Lab Sample ID	10414791008			
Filename	U171222A_13			
Injected By	CVS			
Total Amount Extracted	11.8 g	Matrix	Solid	
% Moisture	1.4	Dilution	NA	
Dry Weight Extracted	11.6 g	Collected	12/14/2017	10:45
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171222A_05 & U171222A_16	Extracted	12/19/2017	15:00
Method Blank ID	BLANK-59264	Analyzed	12/22/2017	18:34

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	64
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	58
				1,2,3,7,8-PeCDF-13C	2.00	62
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	66
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	71
				1,2,3,4,7,8-HxCDF-13C	2.00	70
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	72
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	61
				1,2,3,4,7,8-HxCDD-13C	2.00	67
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	66
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	63
				1,2,3,4,7,8,9-HpCDF-13C	2.00	59
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	63
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	55
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	66
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-09			
Lab Sample ID	10414791009			
Filename	U171222A_14			
Injected By	CVS			
Total Amount Extracted	11.7 g	Matrix	Solid	
% Moisture	1.3	Dilution	NA	
Dry Weight Extracted	11.5 g	Collected	12/14/2017	10:50
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171222A_05 & U171222A_16	Extracted	12/19/2017	15:00
Method Blank ID	BLANK-59264	Analyzed	12/22/2017	19:18

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	58
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	54
				1,2,3,7,8-PeCDF-13C	2.00	56
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	58
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	63
				1,2,3,4,7,8-HxCDF-13C	2.00	62
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	65
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	66
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	53
				1,2,3,4,7,8-HxCDD-13C	2.00	65
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	59
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	63
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	53
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	64
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

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EMPC = Estimated Maximum Possible Concentration
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ND = Not Detected
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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-10			
Lab Sample ID	10414791010			
Filename	U171222A_15			
Injected By	CVS			
Total Amount Extracted	11.8 g	Matrix	Solid	
% Moisture	2.6	Dilution	NA	
Dry Weight Extracted	11.5 g	Collected	12/14/2017	10:55
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171222A_05 & U171222A_16	Extracted	12/19/2017	15:00
Method Blank ID	BLANK-59264	Analyzed	12/22/2017	20:02

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	63
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	55
				1,2,3,7,8-PeCDF-13C	2.00	59
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	59
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	65
				1,2,3,4,7,8-HxCDF-13C	2.00	65
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	67
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	60
				1,2,3,4,7,8-HxCDD-13C	2.00	63
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	63
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	62
				1,2,3,4,7,8,9-HpCDF-13C	2.00	62
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	67
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	63
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	63
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
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NA = Not Applicable
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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	1712347-11			
Lab Sample ID	10414791011			
Filename	U171222B_02			
Injected By	CVS			
Total Amount Extracted	11.9 g	Matrix	Solid	
% Moisture	2.4	Dilution	NA	
Dry Weight Extracted	11.6 g	Collected	12/14/2017	11:00
ICAL ID	U171222	Received	12/16/2017	10:40
CCal Filename(s)	U171222A_16 & U171222B_16	Extracted	12/19/2017	15:00
Method Blank ID	BLANK-59264	Analyzed	12/22/2017	22:13

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	59
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	57
				1,2,3,7,8-PeCDF-13C	2.00	55
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	57
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	61
				1,2,3,4,7,8-HxCDF-13C	2.00	61
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	64
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	64
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	59
				1,2,3,4,7,8-HxCDD-13C	2.00	55
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	57
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	57
				1,2,3,4,7,8,9-HpCDF-13C	2.00	51
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	56
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	49
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	63
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
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NA = Not Applicable
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Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-59234	Matrix	Solid
Filename	F171221A_20	Dilution	NA
Total Amount Extracted	75.1 g	Extracted	12/18/2017 15:20
ICAL ID	F171219	Analyzed	12/22/2017 00:28
CCal Filename(s)	F171221A_17 & F171221A_24	Injected By	SMT

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	66
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	63
				1,2,3,7,8-PeCDF-13C	2.00	87
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	84
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	87
				1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	68
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	68
				1,2,3,4,7,8-HxCDD-13C	2.00	67
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	60
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	64
				1,2,3,4,7,8,9-HpCDF-13C	2.00	60
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	44
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	59
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
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Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-59264	Matrix	Solid
Filename	U171222A_11	Dilution	NA
Total Amount Extracted	15.1 g	Extracted	12/19/2017 15:00
ICAL ID	U171222	Analyzed	12/22/2017 17:06
CCal Filename(s)	U171222A_05 & U171222A_16	Injected By	CVS

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	64
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	61
				1,2,3,7,8-PeCDF-13C	2.00	58
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	58
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	66
				1,2,3,4,7,8-HxCDF-13C	2.00	65
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	68
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	62
				1,2,3,4,7,8-HxCDD-13C	2.00	63
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	62
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	59
				1,2,3,4,7,8,9-HpCDF-13C	2.00	53
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	60
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	50
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	67
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
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Tel: 612-607-1700
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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-59235		
Filename	F171221A_18	Matrix	Solid
Total Amount Extracted	75.6 g	Dilution	NA
ICAL ID	F171219	Extracted	12/18/2017 15:20
CCal Filename(s)	F171221A_17 & F171221A_24	Analyzed	12/21/2017 23:02
Method Blank ID	BLANK-59234	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.17	87	2,3,7,8-TCDF-13C	2.0	82
Total TCDF				2,3,7,8-TCDD-13C	2.0	79
				1,2,3,7,8-PeCDF-13C	2.0	104
2,3,7,8-TCDD	0.20	0.18	89	2,3,4,7,8-PeCDF-13C	2.0	103
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	108
				1,2,3,4,7,8-HxCDF-13C	2.0	81
1,2,3,7,8-PeCDF	1.0	0.88	88	1,2,3,6,7,8-HxCDF-13C	2.0	82
2,3,4,7,8-PeCDF	1.0	0.79	79	2,3,4,6,7,8-HxCDF-13C	2.0	85
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	79
				1,2,3,4,7,8-HxCDD-13C	2.0	79
1,2,3,7,8-PeCDD	1.0	0.82	82	1,2,3,6,7,8-HxCDD-13C	2.0	71
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	78
				1,2,3,4,7,8,9-HpCDF-13C	2.0	72
1,2,3,4,7,8-HxCDF	1.0	0.85	85	1,2,3,4,6,7,8-HpCDD-13C	2.0	79
1,2,3,6,7,8-HxCDF	1.0	0.82	82	OCDD-13C	4.0	53
2,3,4,6,7,8-HxCDF	1.0	0.78	78			
1,2,3,7,8,9-HxCDF	1.0	0.83	83	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	0.82	82	2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	1.0	0.88	88			
1,2,3,7,8,9-HxCDD	1.0	0.92	92			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.82	82			
1,2,3,4,7,8,9-HpCDF	1.0	0.79	79			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.78	78			
Total HpCDD						
OCDF	2.0	1.6	79			
OCDD	2.0	1.6	82			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-59265		
Filename	U171222A_07	Matrix	Solid
Total Amount Extracted	15.2 g	Dilution	NA
ICAL ID	U171222	Extracted	12/19/2017 15:00
CCal Filename(s)	U171222A_05 & U171222A_16	Analyzed	12/22/2017 14:12
Method Blank ID	BLANK-59264	Injected By	CVS

Native Isomers	Qs (ng)	Qm (ng)	% Rec.
2,3,7,8-TCDF	0.20	0.18	89
Total TCDF			
2,3,7,8-TCDD	0.20	0.20	98
Total TCDD			
1,2,3,7,8-PeCDF	1.0	0.99	99
2,3,4,7,8-PeCDF	1.0	0.88	88
Total PeCDF			
1,2,3,7,8-PeCDD	1.0	0.87	87
Total PeCDD			
1,2,3,4,7,8-HxCDF	1.0	1.0	100
1,2,3,6,7,8-HxCDF	1.0	0.91	91
2,3,4,6,7,8-HxCDF	1.0	0.83	83
1,2,3,7,8,9-HxCDF	1.0	0.89	89
Total HxCDF			
1,2,3,4,7,8-HxCDD	1.0	0.94	94
1,2,3,6,7,8-HxCDD	1.0	1.00	100
1,2,3,7,8,9-HxCDD	1.0	0.91	91
Total HxCDD			
1,2,3,4,6,7,8-HpCDF	1.0	0.95	95
1,2,3,4,7,8,9-HpCDF	1.0	0.92	92
Total HpCDF			
1,2,3,4,6,7,8-HpCDD	1.0	0.89	89
Total HpCDD			
OCDF	2.0	1.8	91
OCDD	2.0	1.9	95

Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF-13C	2.0	60
2,3,7,8-TCDD-13C	2.0	56
1,2,3,7,8-PeCDF-13C	2.0	54
2,3,4,7,8-PeCDF-13C	2.0	54
1,2,3,7,8-PeCDD-13C	2.0	61
1,2,3,4,7,8-HxCDF-13C	2.0	67
1,2,3,6,7,8-HxCDF-13C	2.0	74
2,3,4,6,7,8-HxCDF-13C	2.0	73
1,2,3,7,8,9-HxCDF-13C	2.0	59
1,2,3,4,7,8-HxCDD-13C	2.0	66
1,2,3,6,7,8-HxCDD-13C	2.0	63
1,2,3,4,6,7,8-HpCDF-13C	2.0	61
1,2,3,4,7,8,9-HpCDF-13C	2.0	57
1,2,3,4,6,7,8-HpCDD-13C	2.0	61
OCDD-13C	4.0	48
1,2,3,4-TCDD-13C	2.0	NA
1,2,3,7,8,9-HxCDD-13C	2.0	NA
2,3,7,8-TCDD-37Cl4	0.20	66

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Spiked Sample Report

Client - ESS Laboratory

Client's Sample ID	1712347-01-MS		
Lab Sample ID	10414791001-MS		
Filename	U171227C_04	Matrix	Solid
Total Amount Extracted	12.5 g	Dilution	NA
ICAL ID	U171222	Extracted	12/18/2017 15:20
CCal Filename(s)	U171227C_01 & U171227C_19	Analyzed	12/27/2017 20:02
Method Blank ID	BLANK-59234	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.17	86	2,3,7,8-TCDF-13C	2.00	62
				2,3,7,8-TCDD-13C	2.00	60
				1,2,3,7,8-PeCDF-13C	2.00	63
2,3,7,8-TCDD	0.20	0.19	94	2,3,4,7,8-PeCDF-13C	2.00	64
				1,2,3,7,8-PeCDD-13C	2.00	70
				1,2,3,4,7,8-HxCDF-13C	2.00	59
1,2,3,7,8-PeCDF	1.00	0.90	90	1,2,3,6,7,8-HxCDF-13C	2.00	59
2,3,4,7,8-PeCDF	1.00	0.81	81	2,3,4,6,7,8-HxCDF-13C	2.00	62
				1,2,3,7,8,9-HxCDF-13C	2.00	60
				1,2,3,4,7,8-HxCDD-13C	2.00	59
1,2,3,7,8-PeCDD	1.00	0.85	85	1,2,3,6,7,8-HxCDD-13C	2.00	56
				1,2,3,4,6,7,8-HpCDF-13C	2.00	56
				1,2,3,4,7,8,9-HpCDF-13C	2.00	60
1,2,3,4,7,8-HxCDF	1.00	0.90	90	1,2,3,4,6,7,8-HpCDD-13C	2.00	61
1,2,3,6,7,8-HxCDF	1.00	0.89	89	OCDD-13C	4.00	56
2,3,4,6,7,8-HxCDF	1.00	0.79	79			
1,2,3,7,8,9-HxCDF	1.00	0.84	84	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	0.89	89	2,3,7,8-TCDD-37Cl4	0.20	58
1,2,3,6,7,8-HxCDD	1.00	0.92	92			
1,2,3,7,8,9-HxCDD	1.00	0.96	96			
1,2,3,4,6,7,8-HpCDF	1.00	0.90	90			
1,2,3,4,7,8,9-HpCDF	1.00	0.83	83			
1,2,3,4,6,7,8-HpCDD	1.00	0.82	82			
OCDF	2.00	1.79	90			
OCDD	2.00	1.79	89			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Spiked Sample Report

Client - ESS Laboratory

Client's Sample ID	1712347-01-MSD		
Lab Sample ID	10414791001-MSD		
Filename	U171227C_05	Matrix	Solid
Total Amount Extracted	12.5 g	Dilution	NA
ICAL ID	U171222	Extracted	12/18/2017 15:20
CCal Filename(s)	U171227C_01 & U171227C_19	Analyzed	12/27/2017 20:46
Method Blank ID	BLANK-59234	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.17	86	2,3,7,8-TCDF-13C	2.00	90
				2,3,7,8-TCDD-13C	2.00	82
				1,2,3,7,8-PeCDF-13C	2.00	86
2,3,7,8-TCDD	0.20	0.20	100	2,3,4,7,8-PeCDF-13C	2.00	86
				1,2,3,7,8-PeCDD-13C	2.00	95
				1,2,3,4,7,8-HxCDF-13C	2.00	78
1,2,3,7,8-PeCDF	1.00	0.93	93	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	1.00	0.83	83	2,3,4,6,7,8-HxCDF-13C	2.00	80
				1,2,3,7,8,9-HxCDF-13C	2.00	76
				1,2,3,4,7,8-HxCDD-13C	2.00	80
1,2,3,7,8-PeCDD	1.00	0.88	88	1,2,3,6,7,8-HxCDD-13C	2.00	75
				1,2,3,4,6,7,8-HpCDF-13C	2.00	70
				1,2,3,4,7,8,9-HpCDF-13C	2.00	70
1,2,3,4,7,8-HxCDF	1.00	0.87	87	1,2,3,4,6,7,8-HpCDD-13C	2.00	76
1,2,3,6,7,8-HxCDF	1.00	0.86	86	OCDD-13C	4.00	65
2,3,4,6,7,8-HxCDF	1.00	0.81	81			
1,2,3,7,8,9-HxCDF	1.00	0.85	85	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	0.87	87	2,3,7,8-TCDD-37Cl4	0.20	79
1,2,3,6,7,8-HxCDD	1.00	0.94	94			
1,2,3,7,8,9-HxCDD	1.00	0.89	89			
1,2,3,4,6,7,8-HpCDF	1.00	0.92	92			
1,2,3,4,7,8,9-HpCDF	1.00	0.86	86			
1,2,3,4,6,7,8-HpCDD	1.00	0.82	82			
OCDF	2.00	1.73	87			
OCDD	2.00	1.81	90			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Spike Sample Results

Client - ESS Laboratory

Client Sample ID	1712347-01			Dry Weights	
Lab Sample ID	10414791001	Sample Filename	U171227C_09	Sample Amount	11.9 g
MS ID	10414791001-MS	MS Filename	U171227C_04	MS Amount	11.8 g
MSD ID	10414791001-MSD	MSD Filename	U171227C_05	MSD Amount	11.8 g

Analyte	Sample Conc. ng/Kg	MS/MSD Qs (ng)	MS Qm (ng)	MSD Qm (ng)	RPD	Background Subtracted MS % Rec.	MSD % Rec.	RPD
2,3,7,8-TCDF	0.000	0.20	0.17	0.17	0.2	86	86	0.2
2,3,7,8-TCDD	0.000	0.20	0.19	0.20	6.2	94	100	6.2
1,2,3,7,8-PeCDF	0.000	1.00	0.90	0.93	3.2	90	93	3.2
2,3,4,7,8-PeCDF	0.000	1.00	0.81	0.83	2.2	81	83	2.2
1,2,3,7,8-PeCDD	0.000	1.00	0.85	0.88	3.0	85	88	3.0
1,2,3,4,7,8-HxCDF	0.000	1.00	0.90	0.87	3.9	90	87	3.9
1,2,3,6,7,8-HxCDF	0.000	1.00	0.89	0.86	2.5	89	86	2.5
2,3,4,6,7,8-HxCDF	0.000	1.00	0.79	0.81	2.4	79	81	2.4
1,2,3,7,8,9-HxCDF	0.000	1.00	0.84	0.85	1.4	84	85	1.4
1,2,3,4,7,8-HxCDD	0.000	1.00	0.89	0.87	2.8	89	87	2.8
1,2,3,6,7,8-HxCDD	0.000	1.00	0.92	0.94	1.7	92	94	1.7
1,2,3,7,8,9-HxCDD	0.000	1.00	0.96	0.89	7.8	96	89	7.8
1,2,3,4,6,7,8-HpCDF	0.000	1.00	0.90	0.92	1.6	90	91	1.6
1,2,3,4,7,8,9-HpCDF	0.000	1.00	0.83	0.86	2.7	83	86	2.7
1,2,3,4,6,7,8-HpCDD	0.000	1.00	0.82	0.82	0.2	81	81	0.2
OCDF	0.000	2.00	1.79	1.73	3.2	90	87	3.2
OCDD	0.000	2.00	1.79	1.81	1.3	88	89	1.3

Definitions

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712347
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 7,9,10,11
    Analysis: Dioxin
    TAT: 5 day
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

Added 2oz to Samples 7,9,10,11, split samples for Sub work
ec 12/20/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	190932	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	190955	Yes	NA	Yes	VOA Vial - Other	Other	
01	190956	Yes	NA	Yes	VOA Vial - Other	Other	
01	190979	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	190980	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	190992	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	190931	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	190953	Yes	NA	Yes	VOA Vial - Other	Other	
02	190954	Yes	NA	Yes	VOA Vial - Other	Other	
02	190977	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	190978	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	190991	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	190930	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	190951	Yes	NA	Yes	VOA Vial - Other	Other	
03	190952	Yes	NA	Yes	VOA Vial - Other	Other	
03	190975	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	190976	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	190990	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	190929	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	190949	Yes	NA	Yes	VOA Vial - Other	Other	
04	190950	Yes	NA	Yes	VOA Vial - Other	Other	
04	190973	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	190974	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	190989	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712347

Date Received: 12/14/2017

05	190928	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	190947	Yes	NA	Yes	VOA Vial - Other	Other
05	190948	Yes	NA	Yes	VOA Vial - Other	Other
05	190971	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	190972	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	190988	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	190927	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	190945	Yes	NA	Yes	VOA Vial - Other	Other
06	190946	Yes	NA	Yes	VOA Vial - Other	Other
06	190969	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	190970	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	190987	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	190926	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	190943	Yes	NA	Yes	VOA Vial - Other	Other
07	190944	Yes	NA	Yes	VOA Vial - Other	Other
07	190967	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	190968	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	190986	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	192267	Yes	NA	Yes	2 oz. Jar - Unpres	NP
08	190925	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	190941	Yes	NA	Yes	VOA Vial - Other	Other
08	190942	Yes	NA	Yes	VOA Vial - Other	Other
08	190965	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	190966	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	190985	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	190924	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	190939	Yes	NA	Yes	VOA Vial - Other	Other
09	190940	Yes	NA	Yes	VOA Vial - Other	Other
09	190963	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	190964	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	190984	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	192266	Yes	NA	Yes	2 oz. Jar - Unpres	NP
10	190923	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	190937	Yes	NA	Yes	VOA Vial - Other	Other
10	190938	Yes	NA	Yes	VOA Vial - Other	Other
10	190961	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	190962	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	190983	Yes	NA	Yes	4 oz. Jar - Unpres	NP
10	192265	Yes	NA	Yes	2 oz. Jar - Unpres	NP
11	190922	Yes	NA	Yes	VOA Vial - Methanol	MeOH
11	190935	Yes	NA	Yes	VOA Vial - Other	Other
11	190936	Yes	NA	Yes	VOA Vial - Other	Other
11	190959	Yes	NA	Yes	8 oz. Jar - Unpres	NP
11	190960	Yes	NA	Yes	8 oz. Jar - Unpres	NP
11	190982	Yes	NA	Yes	4 oz. Jar - Unpres	NP
11	192264	Yes	NA	Yes	2 oz. Jar - Unpres	NP
12	190921	Yes	NA	Yes	VOA Vial - Methanol	MeOH
12	191059	Yes	NA	Yes	VOA Vial - Methanol	MeOH

2nd Review

Are barcode labels on correct containers? (Yes) No

Completed By: [signature] Date & Time: 12/20/17 1451

Reviewed By: [signature] Date & Time: 12/22/17 1520

Delivered By: [signature] 12/20/17 1521

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712347
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? (Yes) / No
    ESS Sample IDs: **1--11**
    Analysis: **Dioxin, Grain size, Classification, Moisture content**
    TAT: **5 day**
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 12/14/17 Time: 1820 By: [illegible]

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / (No)
    Who was contacted? ____ Date: ____ Time: ____ By: ____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	190932	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	190955	Yes	NA	Yes	VOA Vial - Other	Other	
01	190956	Yes	NA	Yes	VOA Vial - Other	Other	
01	190979	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	190980	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	190992	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	190931	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	190953	Yes	NA	Yes	VOA Vial - Other	Other	
02	190954	Yes	NA	Yes	VOA Vial - Other	Other	
02	190977	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	190978	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	190991	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	190930	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	190951	Yes	NA	Yes	VOA Vial - Other	Other	
03	190952	Yes	NA	Yes	VOA Vial - Other	Other	
03	190975	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	190976	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	190990	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	190929	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	190949	Yes	NA	Yes	VOA Vial - Other	Other	
04	190950	Yes	NA	Yes	VOA Vial - Other	Other	
04	190973	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	190974	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	190989	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712347

Date Received: 12/14/2017

05	190928	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	190947	Yes	NA	Yes	VOA Vial - Other	Other
05	190948	Yes	NA	Yes	VOA Vial - Other	Other
05	190971	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	190972	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	190988	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	190927	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	190945	Yes	NA	Yes	VOA Vial - Other	Other
06	190946	Yes	NA	Yes	VOA Vial - Other	Other
06	190969	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	190970	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	190987	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	190926	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	190943	Yes	NA	Yes	VOA Vial - Other	Other
07	190944	Yes	NA	Yes	VOA Vial - Other	Other
07	190967	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	190968	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	190986	Yes	NA	Yes	4 oz. Jar - Unpres	NP
08	190925	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	190941	Yes	NA	Yes	VOA Vial - Other	Other
08	190942	Yes	NA	Yes	VOA Vial - Other	Other
08	190965	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	190966	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	190985	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	190924	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	190939	Yes	NA	Yes	VOA Vial - Other	Other
09	190940	Yes	NA	Yes	VOA Vial - Other	Other
09	190963	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	190964	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	190984	Yes	NA	Yes	4 oz. Jar - Unpres	NP
10	190923	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	190937	Yes	NA	Yes	VOA Vial - Other	Other
10	190938	Yes	NA	Yes	VOA Vial - Other	Other
10	190961	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	190962	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	190983	Yes	NA	Yes	4 oz. Jar - Unpres	NP
11	190922	Yes	NA	Yes	VOA Vial - Methanol	MeOH
11	190935	Yes	NA	Yes	VOA Vial - Other	Other
11	190936	Yes	NA	Yes	VOA Vial - Other	Other
11	190959	Yes	NA	Yes	8 oz. Jar - Unpres	NP
11	190960	Yes	NA	Yes	8 oz. Jar - Unpres	NP
11	190982	Yes	NA	Yes	4 oz. Jar - Unpres	NP
12	190921	Yes	NA	Yes	VOA Vial - Methanol	MeOH
12	191059	Yes	NA	Yes	VOA Vial - Methanol	MeOH

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/14/17 1735

Reviewed By: _____ Date & Time: 12/14/17 1817

Delivered By: _____ 12/14/17 1817

Changes made 12/15/17 - ML

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab #	1712347
Turn Time	5-Day Rush
Reporting Limits	S-1
Regulatory State	
Electonic Deliverables	☑ Limit Checker ☐ Standard Excel ☐ Other (Please Specify →)

Is this project for any of the following?: ○ CT RCP ◉ MA MCP ○ RGP

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

	ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
1	01 11	12/14/17	10:10 AM	Grab	Soil	Type C - Capping Sand - 019	X	X	X	X	X	X	X	X	X	X	X
2	02 12	12/14/17	10:15 AM	Grab	Soil	Type C - Capping Sand - 020	X	X	X	X	X	X	X	X	X	X	X
3	03 13	12/14/17	10:20 AM	Grab	Soil	Type C - Capping Sand - 021	X	X	X	X	X	X	X	X	X	X	X
4	04 14	12/14/17	10:25 AM	Grab	Soil	Type C - Capping Sand - 022	X	X	X	X	X	X	X	X	X	X	X
5	05 15	12/14/17	10:30 AM	Grab	Soil	Type C - Capping Sand - 023	X	X	X	X	X	X	X	X	X	X	X
6	06 16	12/14/17	10:35 AM	Grab	Soil	Type C - Capping Sand - 024	X	X	X	X	X	X	X	X	X	X	X
7	07 17	12/14/17	10:40 AM	Grab	Soil	Type C - Capping Sand - 025	X	X	X	X	X	X	X	X	X	X	X
8	08 18	12/14/17	10:45 AM	Grab	Soil	Type B - Capping Sand - 001	X	X	X	X	X	X	X	X	X	X	X
9	09 19	12/14/17	10:50 AM	Grab	Soil	Type B - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
10	10 20	12/14/17	10:55 AM	Grab	Soil	Type B - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim 12 3.3

Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Gradation on A 1st. Then, proceed analytical & gradation B & C

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[illegible] 12/14	J Byrne 12/14/17 12pm	J Byrne 12/14/17 15:34	[illegible] 12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton SPS			

Changes made 12/15/17 - ML

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CHAIN OF CUSTODY

ESS Lab # 1712347

Turn Time 5-Day Rush

Regulatory State

Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1

Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

	ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
11	01 ~~01~~	12/14/17	11:00 AM	Grab	Soil	Type B - Capping Sand - 004	X	X	X	X	X	X	X	X	~~X~~	~~X~~	~~X~~
12	02 ~~02~~	12/14/17		Grab	Soil	TB Vials											

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	G - Glass	O-Other	P-Poly	S-Sterile	V-Vial		
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Other*
											Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim ice 3.3

Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then proceed analytical & gradation B&C.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12/14	[signature] 12/14/17 12pm	[signature] 12/14/17 15:34	[signature] 12/14/17 1543
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**
Devon Walton SPS			

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CHAIN OF CUSTODY

ESS Lab #	1712347
Turn Time	5-Day Rush
Reporting Limits	S-1
Regulatory State	
Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
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Contact Person	Address
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City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
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Analysis

	ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
1	01 11	12/14/17	10:10 AM	Grab	Soil	Type C - Capping Sand - 019	X	X	X	X	X	X	X	X	X	X	X
2	02 12	12/14/17	10:15 AM	Grab	Soil	Type C - Capping Sand - 020	X	X	X	X	X	X	X	X	X	X	X
3	03 13	12/14/17	10:20 AM	Grab	Soil	Type C - Capping Sand - 021	X	X	X	X	X	X	X	X	X	X	X
4	04 14	12/14/17	10:25 AM	Grab	Soil	Type C - Capping Sand - 022	X	X	X	X	X	X	X	X	X	X	X
5	05 15	12/14/17	10:30 AM	Grab	Soil	Type C - Capping Sand - 023	X	X	X	X	X	X	X	X	X	X	X
6	06 16	12/14/17	10:35 AM	Grab	Soil	Type C - Capping Sand - 024	X	X	X	X	X	X	X	X	X	X	X
7	07 17	12/14/17	10:40 AM	Grab	Soil	Type C - Capping Sand - 025	X	X	X	X	X	X	X	X	X	X	X
8	08 18	12/14/17	10:45 AM	Grab	Soil	Type B - Capping Sand - 001	X	X	X	X	X	X	X	X	X	X	X
9	09 19	12/14/17	10:50 AM	Grab	Soil	Type B - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
10	10 20	12/14/17	10:55 AM	Grab	Soil	Type B - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim 12 3.3

Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st. Then, proceed analytical & gradation B & C

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[illegible] 12/14	J Byrne 12/14/17 12pm	J Byrne 12/14/17 15:34	[illegible] 12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton SPS			

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CHAIN OF CUSTODY

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Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
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Company Name	Project #	Project Name
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Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

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	ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
11	01 21	12/14/17	11:00 AM	Grab	Soil	Type B - Capping Sand - 004	X	X	X	X	X	X	X	X	X	X	X
12	02 22	12/14/17		Grab	Soil	TB Vials											

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim ice 3.3

Cooler Temperature: °C

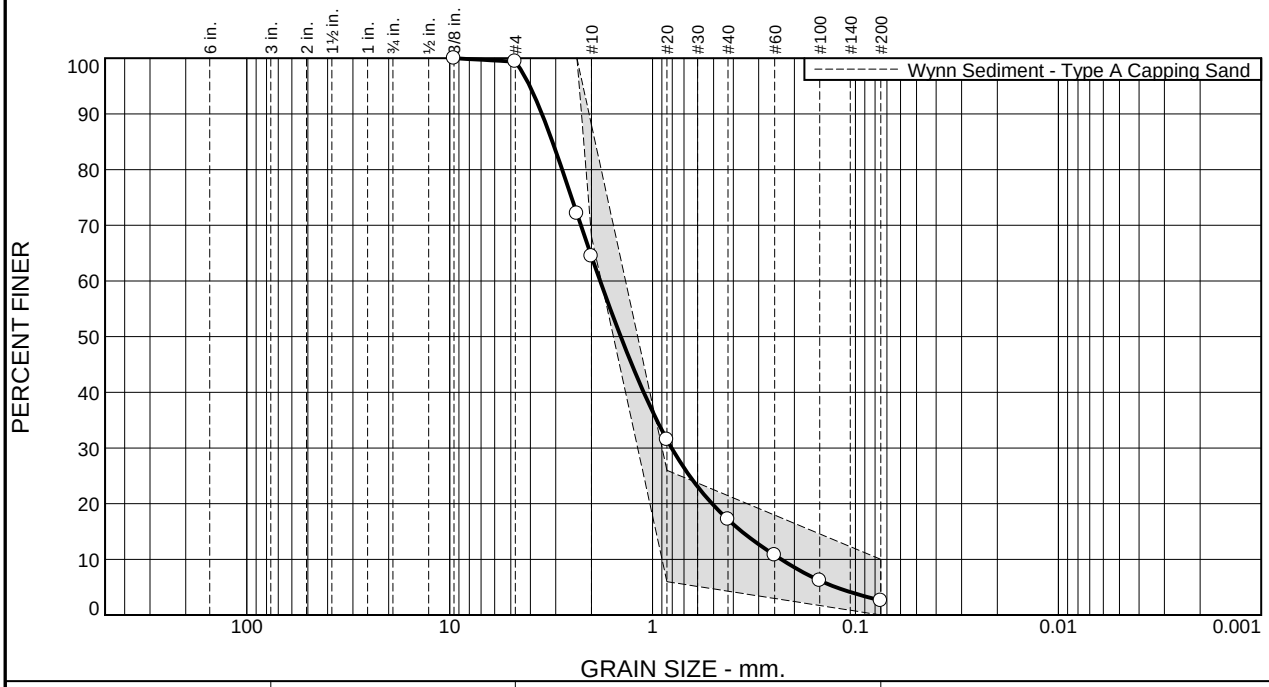
Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then proceed analytical & gradation B&C.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
12/14	12/14/17 12pm	12/14/17 15:34	12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Walton SPS			

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	35.0	47.2	14.6	2.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.4		
#8	72.1	100.0	X
#10	64.4	68.0 - 88.0	X
#20	31.5	6.0 - 26.0	X
#40	17.2		
#60	10.7		
#100	6.2		
#200	2.6	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.5083 D_{85}= 3.1149 D_{60}= 1.8129
D_{50}= 1.4351 D_{30}= 0.8053 D_{15}= 0.3630
D_{10}= 0.2324 C_u= 7.80 C_c= 1.54

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

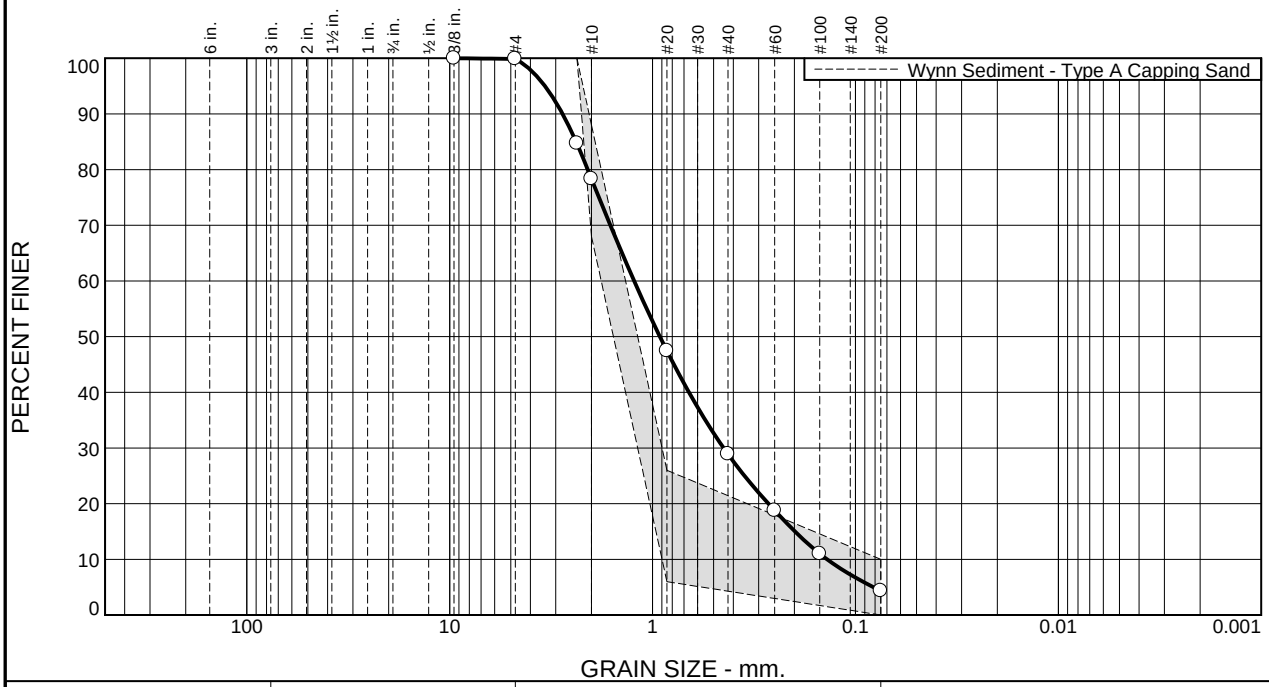
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
Sample Number: Type A - 002

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711725 **Figure** 1711725-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	21.6	49.4	24.6	4.3	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.9		
#8	84.7	100.0	X
#10	78.3	68.0 - 88.0	
#20	47.5	6.0 - 26.0	X
#40	28.9		
#60	18.8		
#100	11.0		
#200	4.3	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 2.7762 D_{85}= 2.3800 D_{60}= 1.2324
D_{50}= 0.9202 D_{30}= 0.4464 D_{15}= 0.1986
D_{10}= 0.1381 C_u= 8.93 C_c= 1.17

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

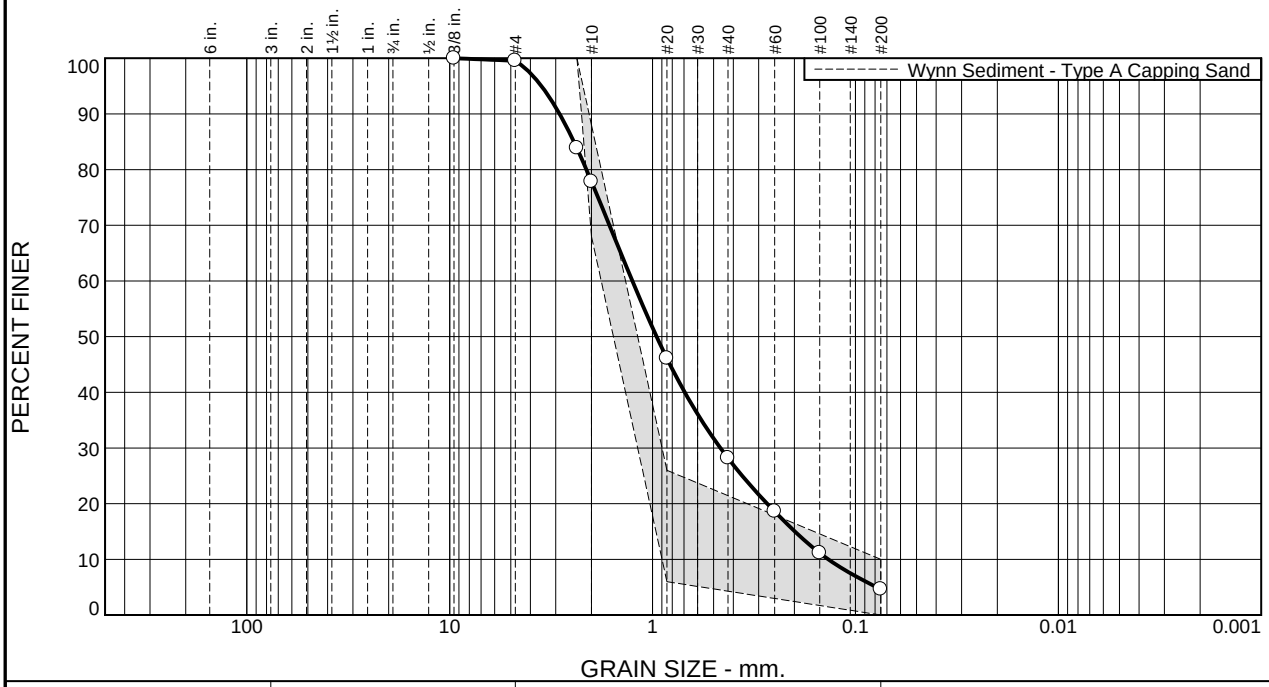
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
Sample Number: Type A - 003

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711725 **Figure** 1711725-02

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	21.7	49.6	23.6	4.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.5		
#8	83.9	100.0	X
#10	77.8	68.0 - 88.0	
#20	46.1	6.0 - 26.0	X
#40	28.2		
#60	18.6		
#100	11.1		
#200	4.6	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 2.8723 D_{85}= 2.4402 D_{60}= 1.2578
D_{50}= 0.9553 D_{30}= 0.4631 D_{15}= 0.1989
D_{10}= 0.1361 C_u= 9.24 C_c= 1.25

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

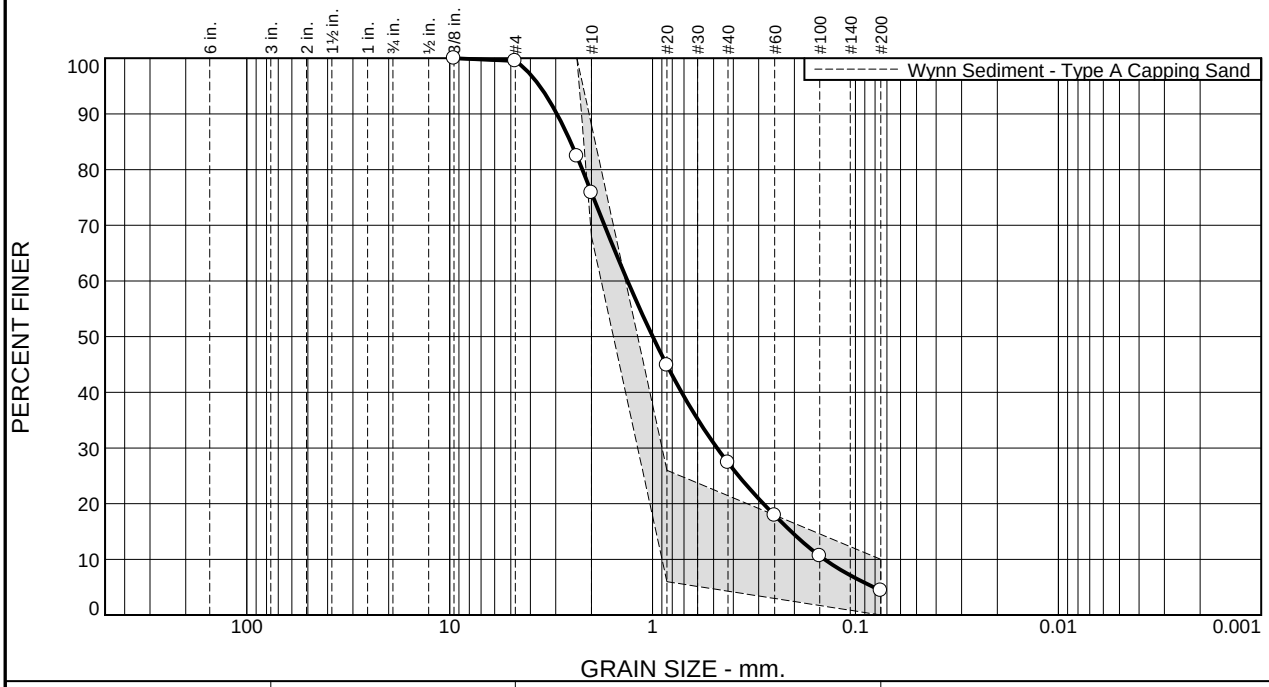
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
Sample Number: Type A - 004

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711725 **Figure** 1711725-03

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	23.7	48.4	23.0	4.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.5		
#8	82.4	100.0	X
#10	75.8	68.0 - 88.0	
#20	44.9	6.0 - 26.0	X
#40	27.4		
#60	17.9		
#100	10.6		
#200	4.4	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 2.9604 D_{85}= 2.5356 D_{60}= 1.3276
D_{50}= 0.9982 D_{30}= 0.4811 D_{15}= 0.2074
D_{10}= 0.1423 C_u= 9.33 C_c= 1.23

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

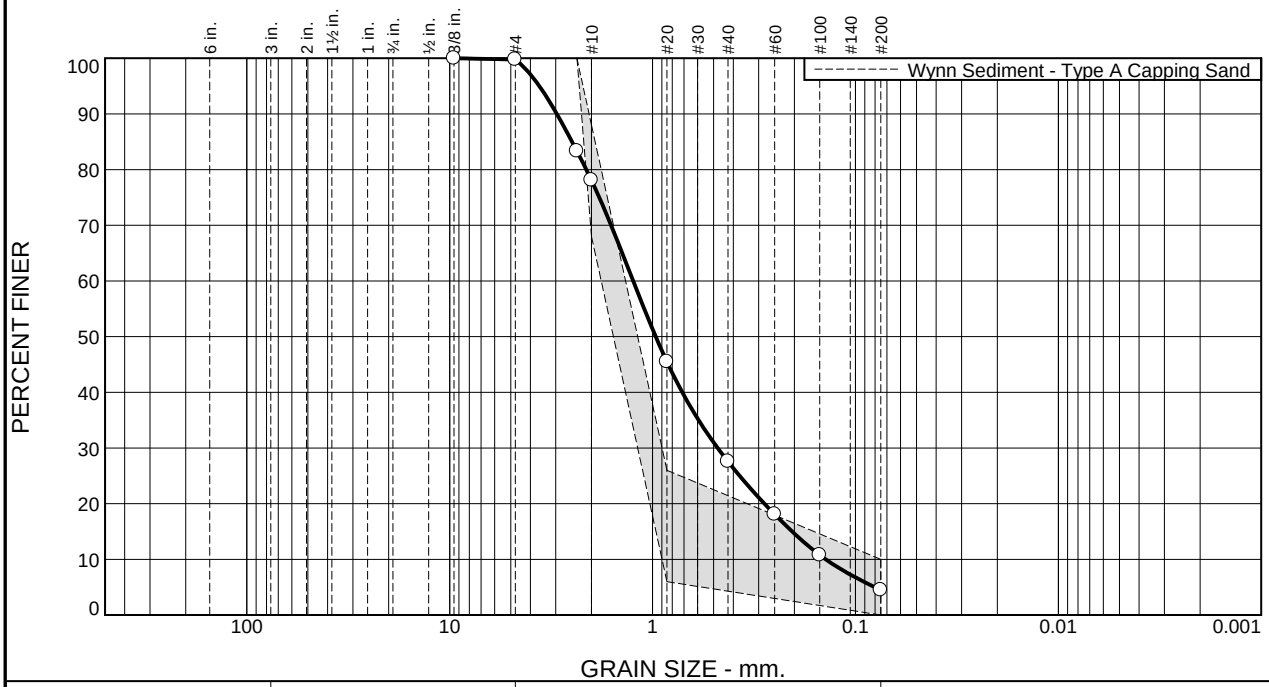
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
Sample Number: Type A - 005

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711725 **Figure** 1711725-04

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	21.7	50.5	23.1	4.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.8		
#8	83.3	100.0	X
#10	78.1	68.0 - 88.0	
#20	45.5	6.0 - 26.0	X
#40	27.6		
#60	18.1		
#100	10.8		
#200	4.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 2.9635 D_{85}= 2.4941 D_{60}= 1.2461
D_{50}= 0.9649 D_{30}= 0.4777 D_{15}= 0.2052
D_{10}= 0.1402 C_u= 8.89 C_c= 1.31

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

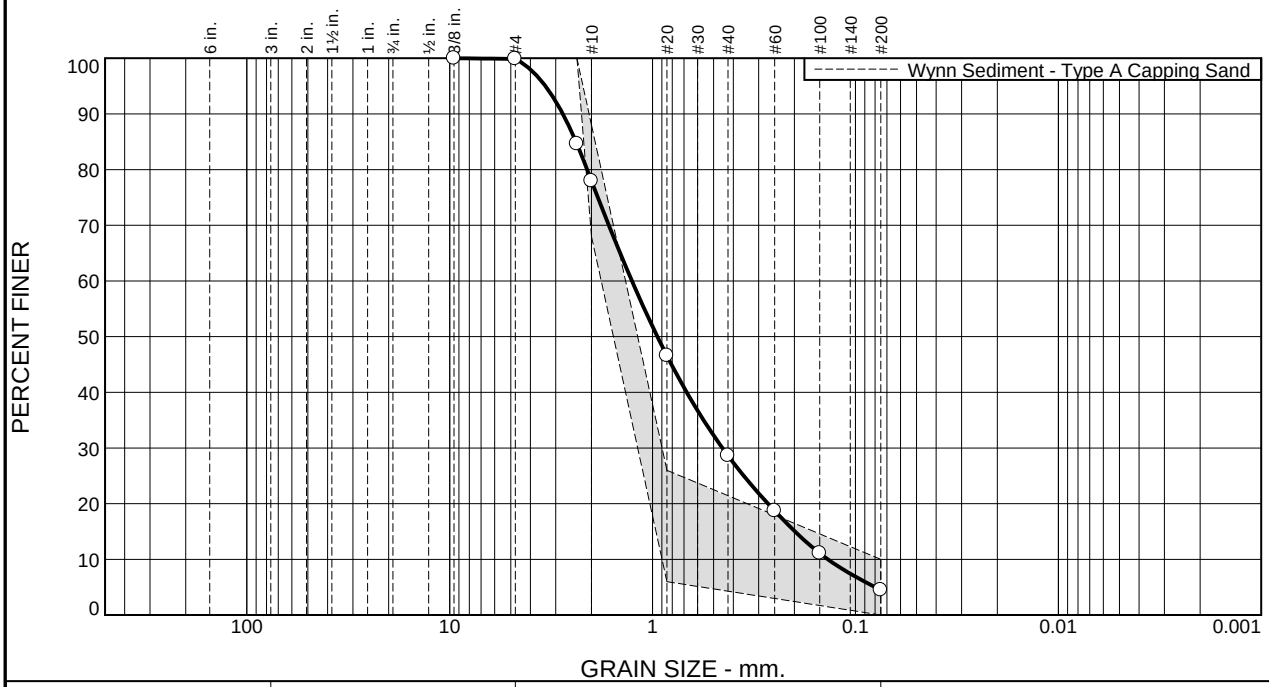
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
Sample Number: Type A - 006

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711725 **Figure** 1711725-05

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	22.0	49.3	24.1	4.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.9		
#8	84.6	100.0	X
#10	77.9	68.0 - 88.0	
#20	46.6	6.0 - 26.0	X
#40	28.6		
#60	18.7		
#100	11.1		
#200	4.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 2.7673 D_{85}= 2.3837 D_{60}= 1.2635
D_{50}= 0.9466 D_{30}= 0.4528 D_{15}= 0.1987
D_{10}= 0.1369 C_u= 9.23 C_c= 1.19

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

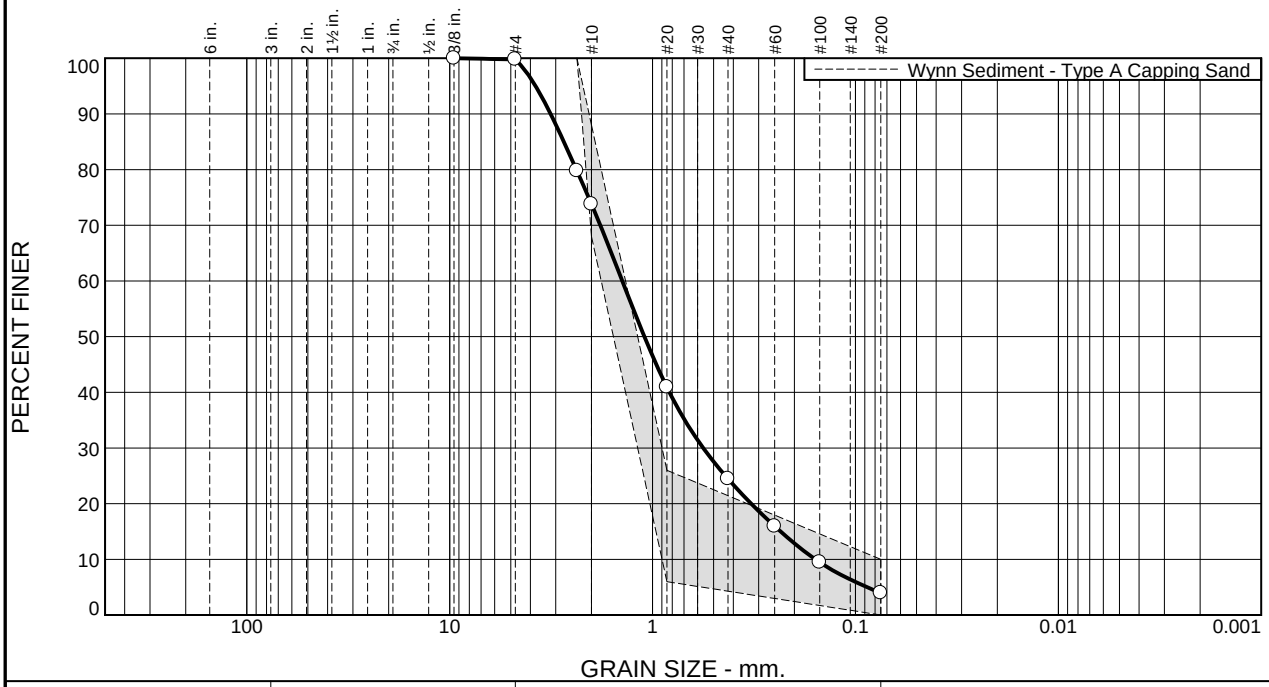
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
Sample Number: Type A - 007

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711725 **Figure** 1711725-06

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	26.0	49.3	20.5	4.0	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.8		
#8	79.8	100.0	X
#10	73.8	68.0 - 88.0	
#20	40.9	6.0 - 26.0	X
#40	24.5		
#60	15.9		
#100	9.5		
#200	4.0	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.1785 D_{85}= 2.7373 D_{60}= 1.4102
D_{50}= 1.0970 D_{30}= 0.5628 D_{15}= 0.2340
D_{10}= 0.1577 C_u= 8.94 C_c= 1.42

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

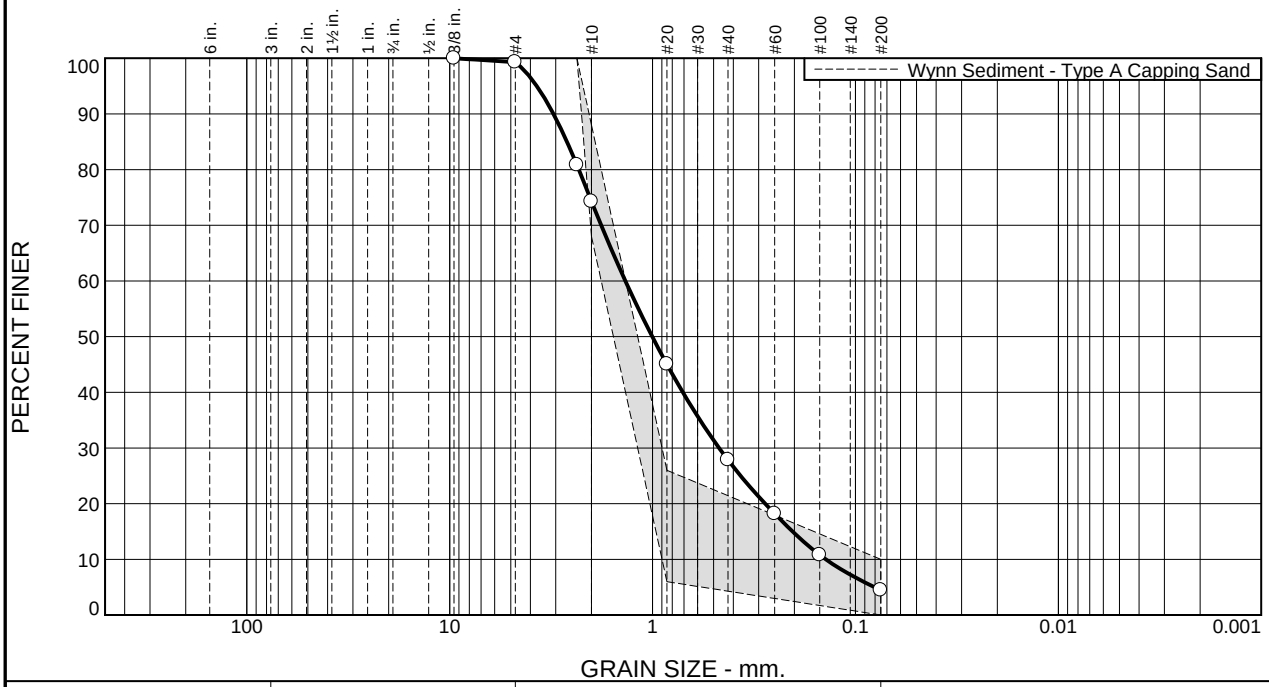
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
Sample Number: Type A - 008

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711725 **Figure** 1711725-07

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	25.0	46.4	23.4	4.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.3		
#8	80.8	100.0	X
#10	74.3	68.0 - 88.0	
#20	45.0	6.0 - 26.0	X
#40	27.9		
#60	18.2		
#100	10.8		
#200	4.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.0799 D_{85}= 2.6420 D_{60}= 1.3616
D_{50}= 1.0035 D_{30}= 0.4699 D_{15}= 0.2042
D_{10}= 0.1402 C_u= 9.71 C_c= 1.16

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17

Sample Number: Type A - 009

Thielsch Engineering Inc.

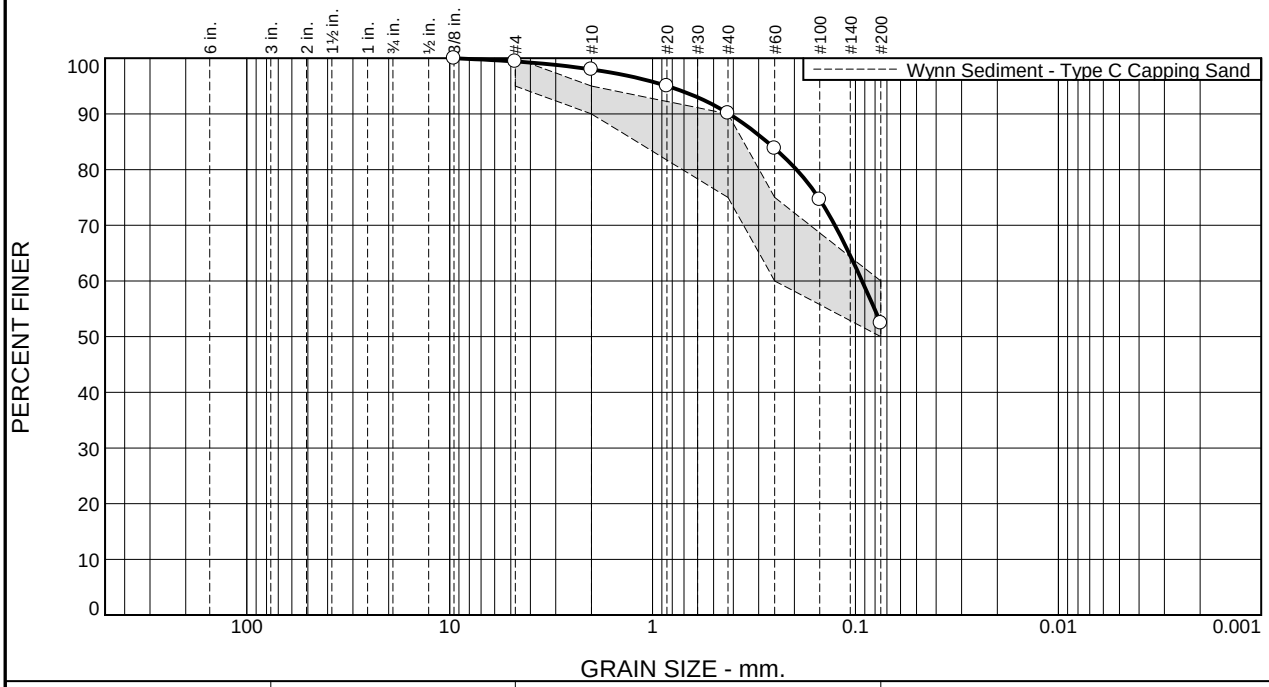
Cranston, RI

Client: ESS / Charter Contracting

Project: Wynn Boston Harbor Sediment Remediation
Boston, MA

Project No: 1711725 **Figure** 1711725-08

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	1.4	7.9	37.7	52.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.4	95.0 - 100.0	
#10	98.0	90.0 - 95.0	X
#20	95.0		
#40	90.1	75.0 - 90.0	X
#60	83.8	60.0 - 75.0	X
#100	74.6		
#200	52.4	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt (ML)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 0.4190 D_{85}= 0.2733 D_{60}= 0.0928
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

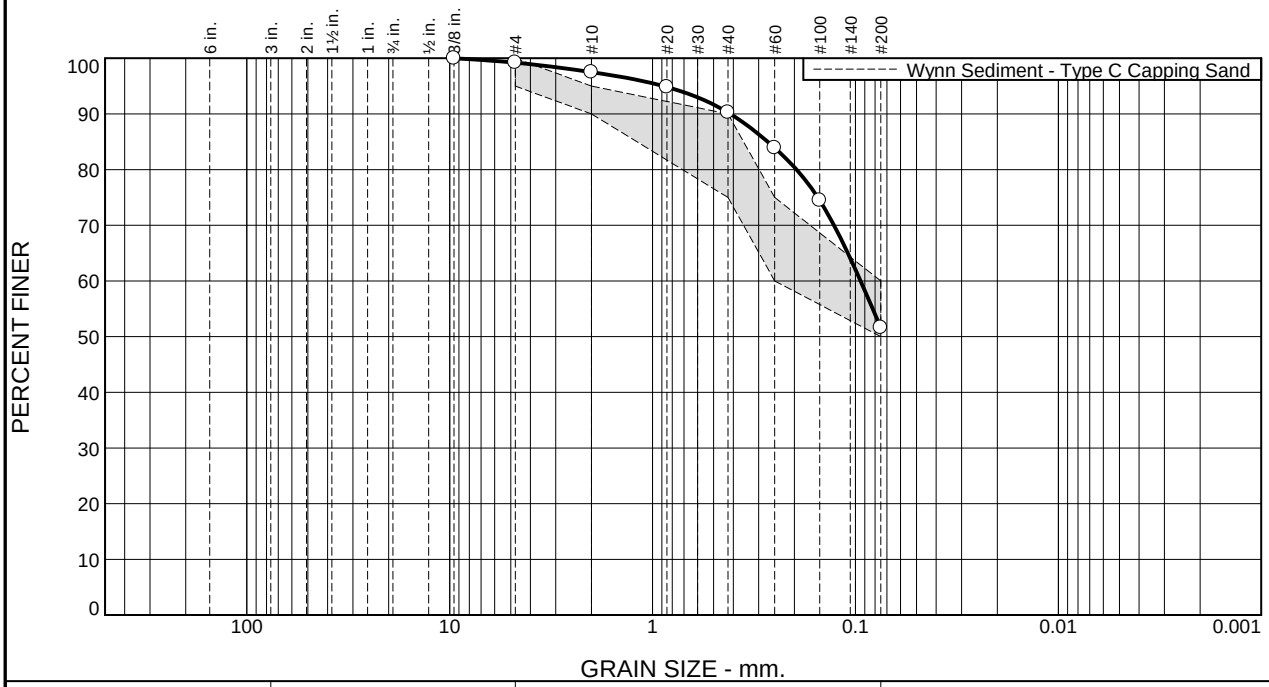
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
Sample Number: Type C - 002

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711725 **Figure** 1711725-09

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	1.7	7.2	38.7	51.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.2	95.0 - 100.0	
#10	97.5	90.0 - 95.0	X
#20	94.8		
#40	90.3	75.0 - 90.0	X
#60	83.9	60.0 - 75.0	X
#100	74.5		
#200	51.6	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt (ML)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 0.4138 D_{85}= 0.2708 D_{60}= 0.0944
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 11/29/17 **Date Tested:** 12/1/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

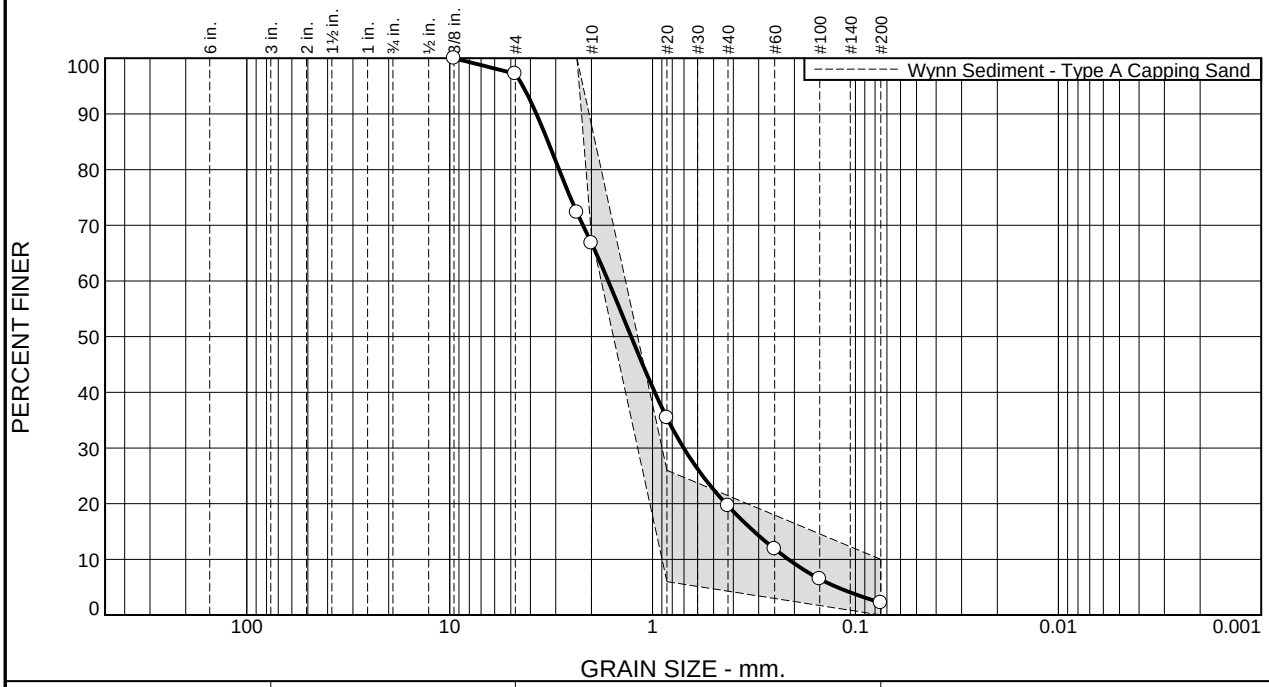
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
Sample Number: Type C - 003

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711725 **Figure** 1711725-10

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.8	30.4	47.2	17.4	2.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	97.2		
#8	72.3	100.0	X
#10	66.8	68.0 - 88.0	X
#20	35.4	6.0 - 26.0	X
#40	19.6		
#60	11.9		
#100	6.5		
#200	2.2	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.7338 D_{85}= 3.2740 D_{60}= 1.6542
D_{50}= 1.2753 D_{30}= 0.7025 D_{15}= 0.3160
D_{10}= 0.2140 C_u= 7.73 C_c= 1.39

Remarks

Date Received: 12/1/17 **Date Tested:** 12/5/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

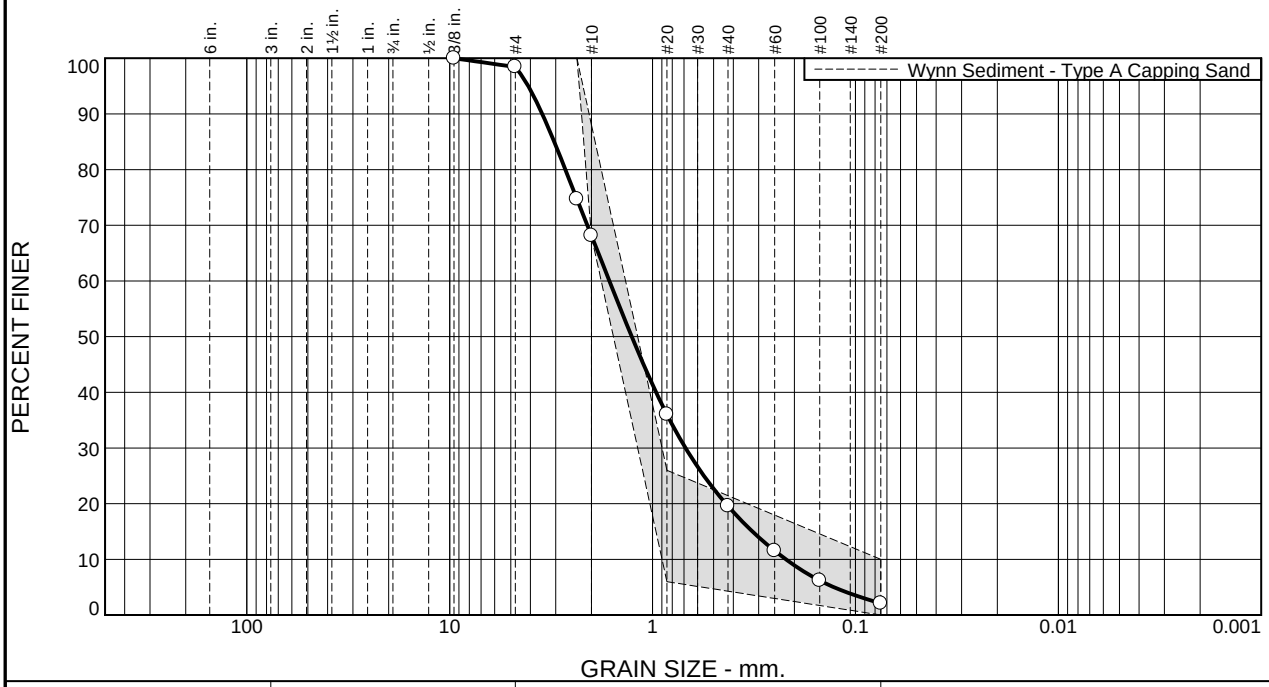
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
Sample Number: Type A - 010

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1711794-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	30.3	48.5	17.5	2.1	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.4		
#8	74.7	100.0	X
#10	68.1	68.0 - 88.0	
#20	36.0	6.0 - 26.0	X
#40	19.6		
#60	11.5		
#100	6.2		
#200	2.1	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4965 D_{85}= 3.0528 D_{60}= 1.6325
D_{50}= 1.2660 D_{30}= 0.6878 D_{15}= 0.3216
D_{10}= 0.2202 C_u= 7.41 C_c= 1.32

Remarks

Date Received: 12/1/17 **Date Tested:** 12/5/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

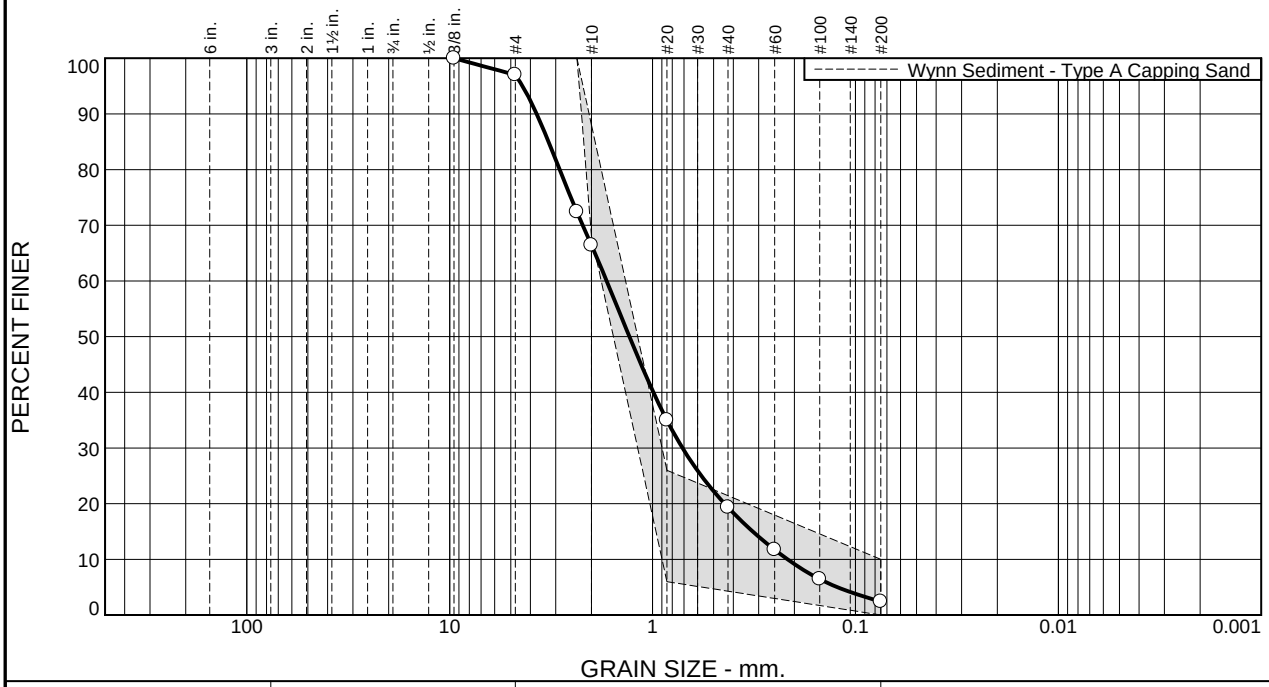
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
Sample Number: Type A - 011

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1711794-02

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.0	30.6	47.1	16.9	2.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	97.0		
#8	72.4	100.0	X
#10	66.4	68.0 - 88.0	X
#20	35.0	6.0 - 26.0	X
#40	19.3		
#60	11.7		
#100	6.4		
#200	2.4	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.7257 D_{85}= 3.2554 D_{60}= 1.6842
D_{50}= 1.3002 D_{30}= 0.7120 D_{15}= 0.3207
D_{10}= 0.2162 C_u= 7.79 C_c= 1.39

Remarks

Date Received: 12/1/17 **Date Tested:** 12/5/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

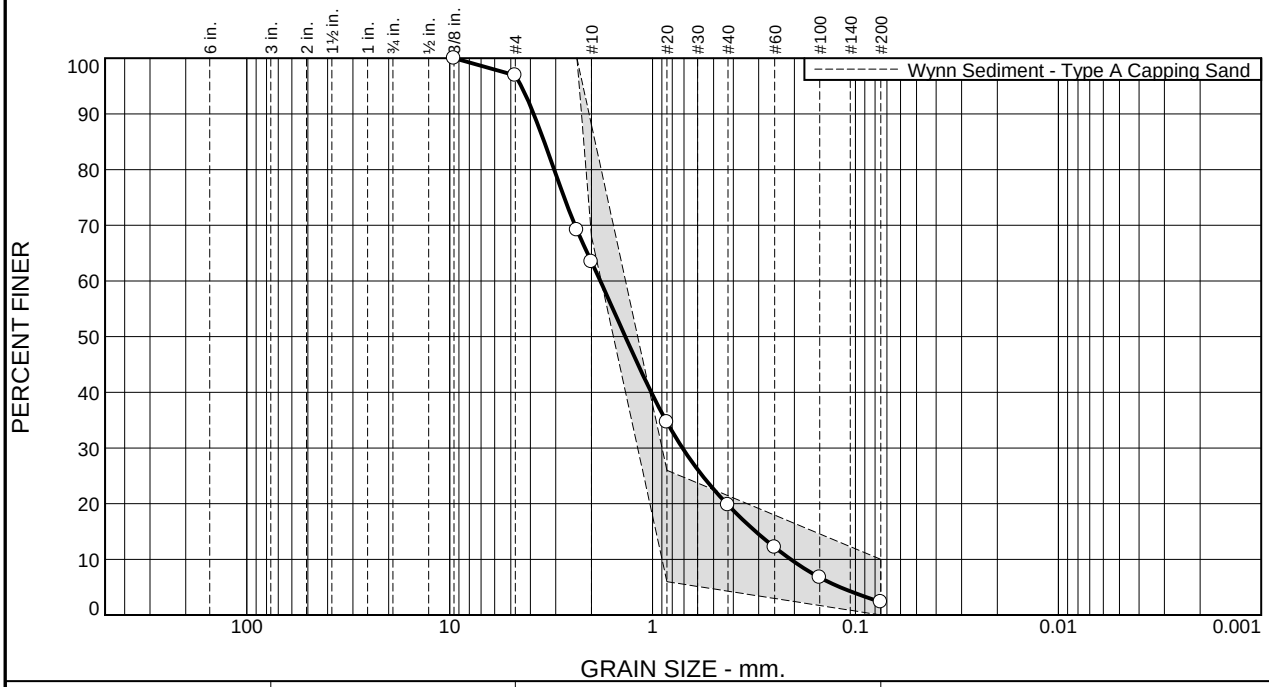
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
Sample Number: Type A - 012

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1711794-03

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.1	33.5	43.6	17.5	2.3	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	96.9		
#8	69.2	100.0	X
#10	63.4	68.0 - 88.0	X
#20	34.6	6.0 - 26.0	X
#40	19.8		
#60	12.1		
#100	6.7		
#200	2.3	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.8532 D_{85}= 3.4183 D_{60}= 1.8091
D_{50}= 1.3626 D_{30}= 0.7121 D_{15}= 0.3103
D_{10}= 0.2085 C_u= 8.68 C_c= 1.34

Remarks

Date Received: 12/1/17 **Date Tested:** 12/5/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

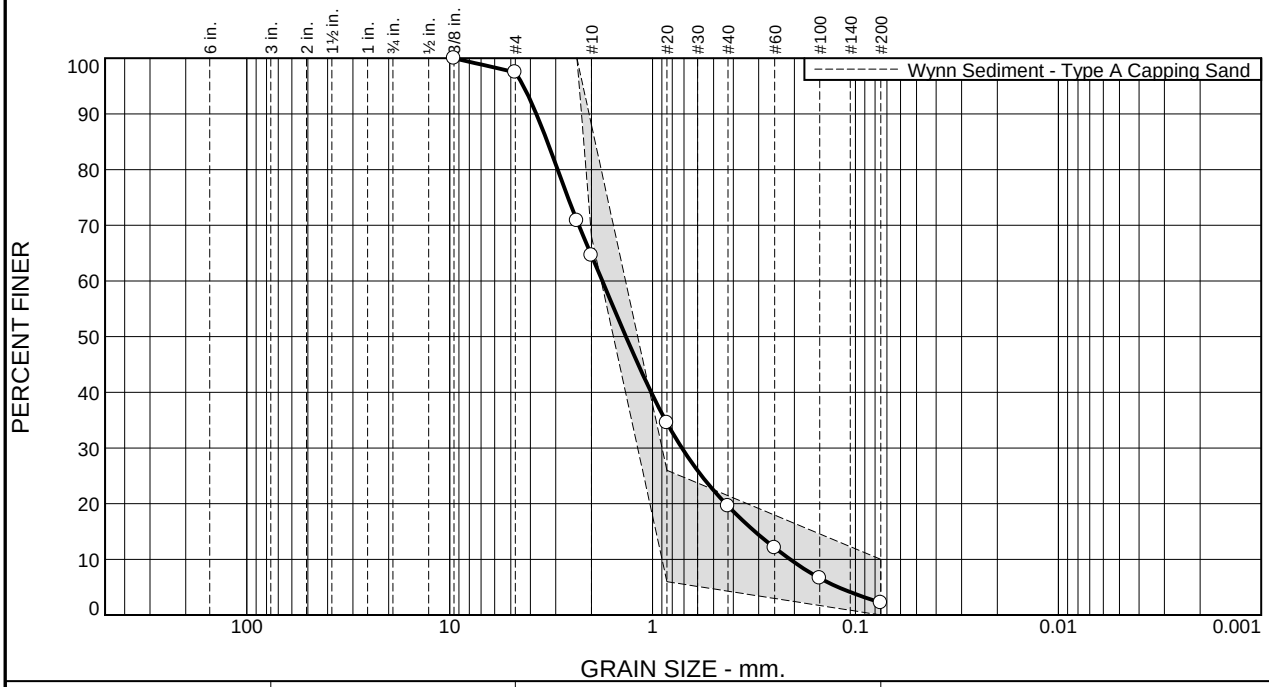
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
Sample Number: Type A - 013

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1711794-04

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.5	32.9	45.0	17.4	2.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	97.5		
#8	70.8	100.0	X
#10	64.6	68.0 - 88.0	X
#20	34.5	6.0 - 26.0	X
#40	19.6		
#60	12.1		
#100	6.6		
#200	2.2	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Light Brown well-graded sand (SW)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.7384 D_{85}= 3.3001 D_{60}= 1.7688
D_{50}= 1.3528 D_{30}= 0.7169 D_{15}= 0.3130
D_{10}= 0.2100 C_u= 8.42 C_c= 1.38

Remarks

Date Received: 12/1/17 **Date Tested:** 12/5/17

Tested By: JAL

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

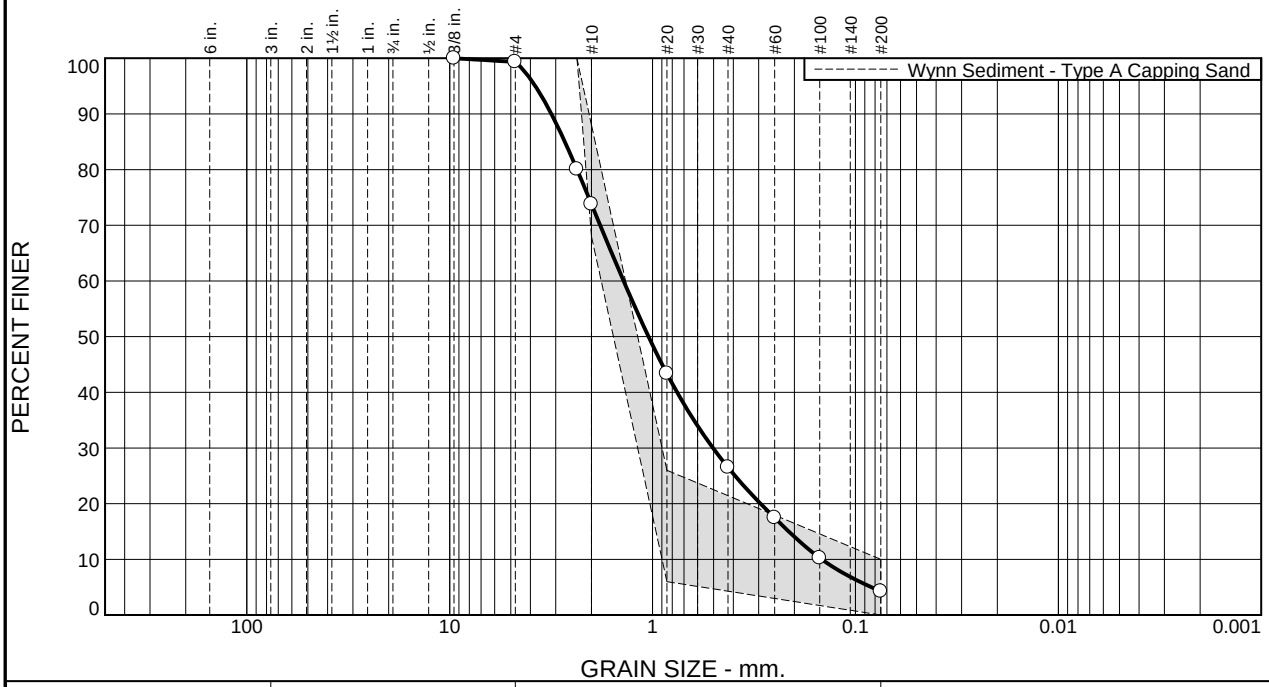
Source of Sample: Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
Sample Number: Type A - 014

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1711794-05

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	25.5	47.3	22.3	4.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.3		
#8	80.1	100.0	X
#10	73.8	68.0 - 88.0	
#20	43.4	6.0 - 26.0	X
#40	26.5		
#60	17.4		
#100	10.2		
#200	4.2	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.1526 D_{85}= 2.7064 D_{60}= 1.3895
D_{50}= 1.0470 D_{30}= 0.5038 D_{15}= 0.2131
D_{10}= 0.1469 C_u= 9.46 C_c= 1.24

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

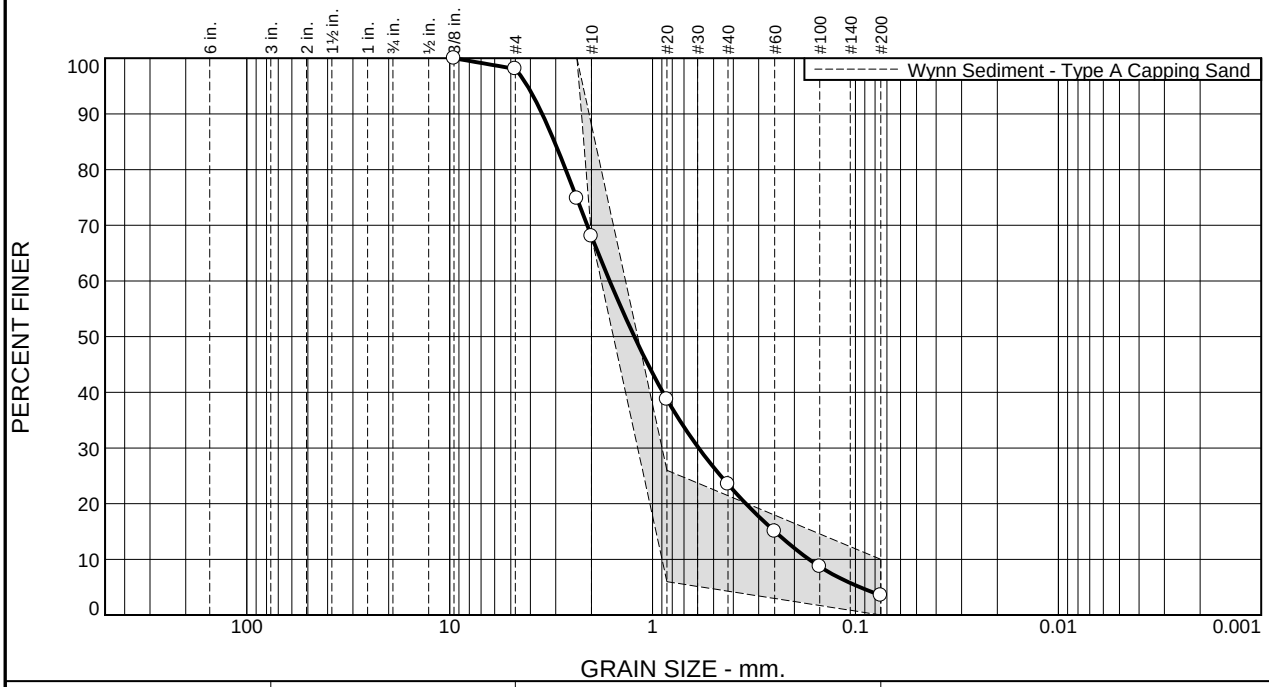
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 015

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	30.0	44.6	20.0	3.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.1		
#8	74.8	100.0	X
#10	68.1	68.0 - 88.0	
#20	38.7	6.0 - 26.0	X
#40	23.5		
#60	15.0		
#100	8.7		
#200	3.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4985 D_{85}= 3.0436 D_{60}= 1.6269
D_{50}= 1.2292 D_{30}= 0.5927 D_{15}= 0.2495
D_{10}= 0.1696 C_u= 9.59 C_c= 1.27

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

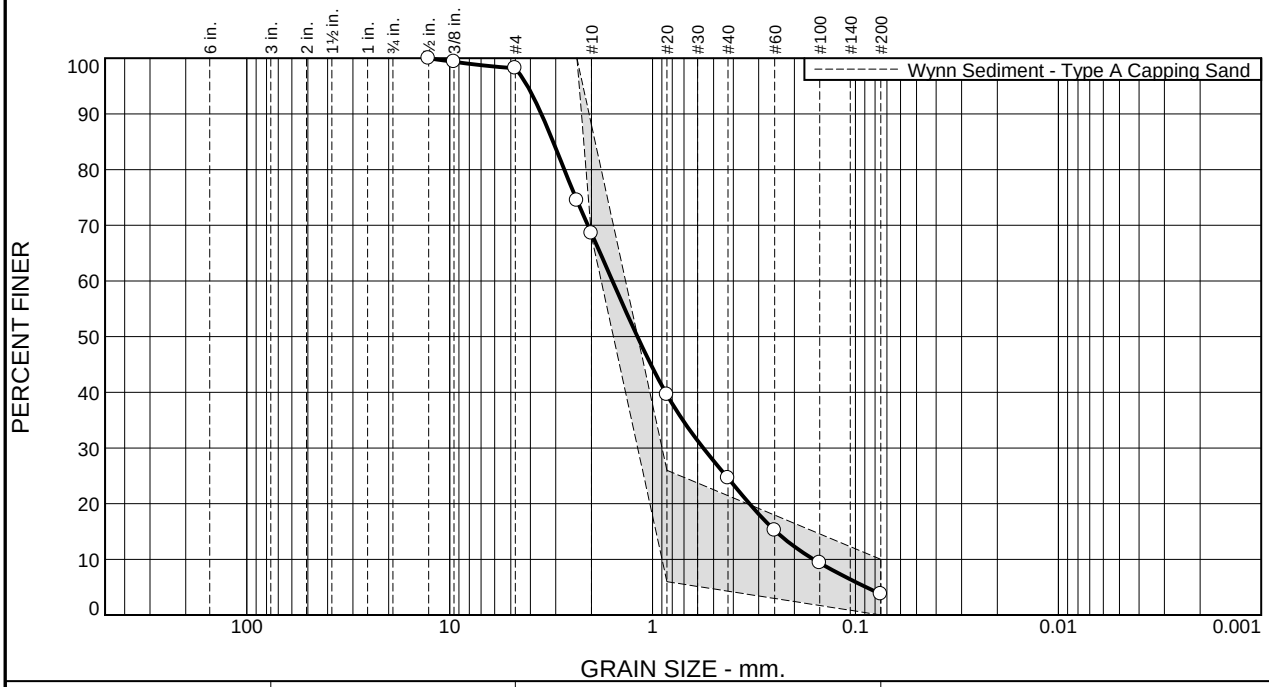
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 016

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-02

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.8	29.6	44.0	20.9	3.7	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.3		
#4	98.2		
#8	74.5	100.0	X
#10	68.6	68.0 - 88.0	
#20	39.6	6.0 - 26.0	X
#40	24.6		
#60	15.2		
#100	9.4		
#200	3.7	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.5329 D_{85}= 3.0911 D_{60}= 1.5763
D_{50}= 1.1876 D_{30}= 0.5626 D_{15}= 0.2465
D_{10}= 0.1607 C_u= 9.81 C_c= 1.25

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

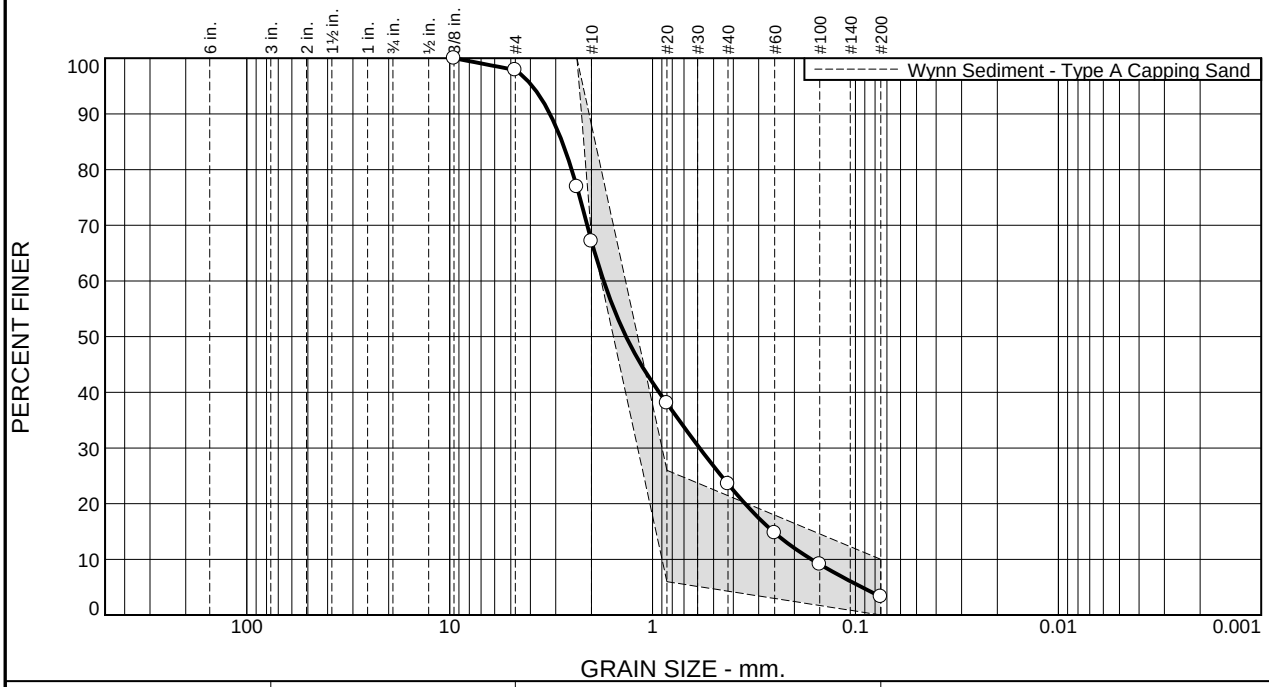
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 017

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-03

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	30.8	43.6	20.2	3.3	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	97.9		
#8	76.9	100.0	X
#10	67.1	68.0 - 88.0	X
#20	38.0	6.0 - 26.0	X
#40	23.5		
#60	14.8		
#100	9.1		
#200	3.3	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.2036 D_{85}= 2.7901 D_{60}= 1.7423
D_{50}= 1.3511 D_{30}= 0.5865 D_{15}= 0.2545
D_{10}= 0.1648 C_u= 10.57 C_c= 1.20

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

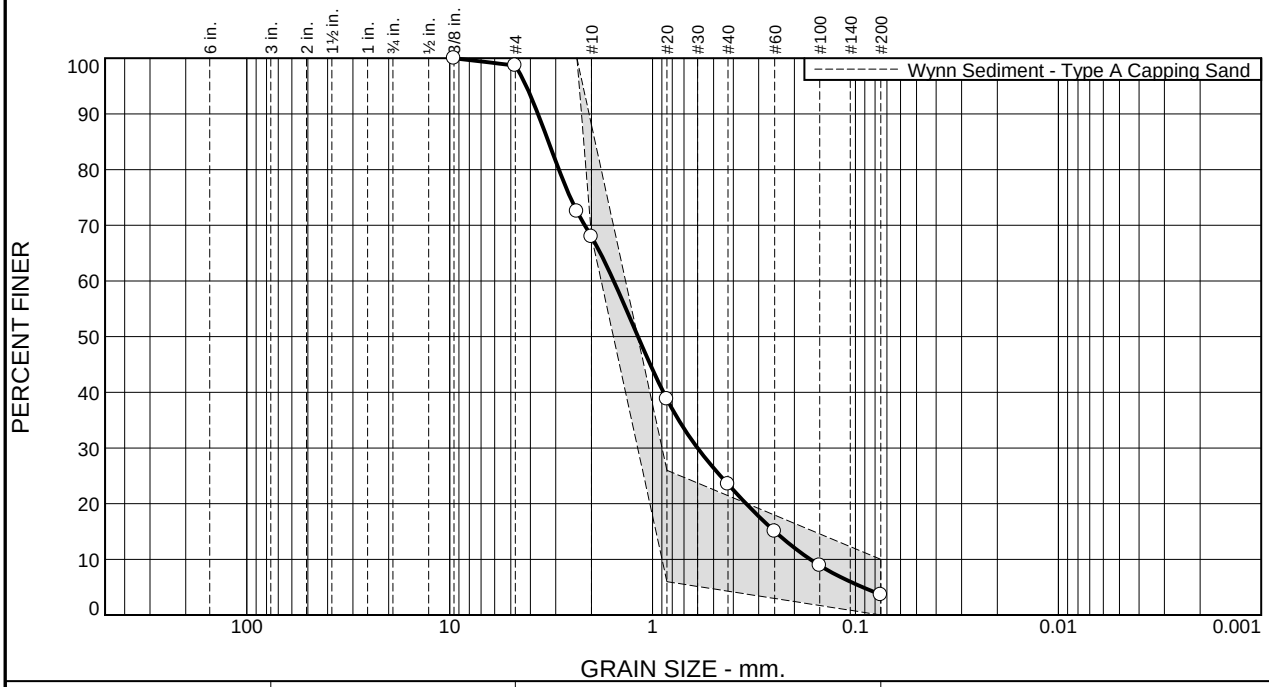
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 018

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-04

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	30.7	44.5	19.9	3.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.7		
#8	72.5	100.0	X
#10	68.0	68.0 - 88.0	
#20	38.8	6.0 - 26.0	X
#40	23.5		
#60	15.0		
#100	8.9		
#200	3.6	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.6712 D_{85}= 3.2584 D_{60}= 1.5546
D_{50}= 1.1799 D_{30}= 0.6003 D_{15}= 0.2495
D_{10}= 0.1671 C_u= 9.30 C_c= 1.39

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

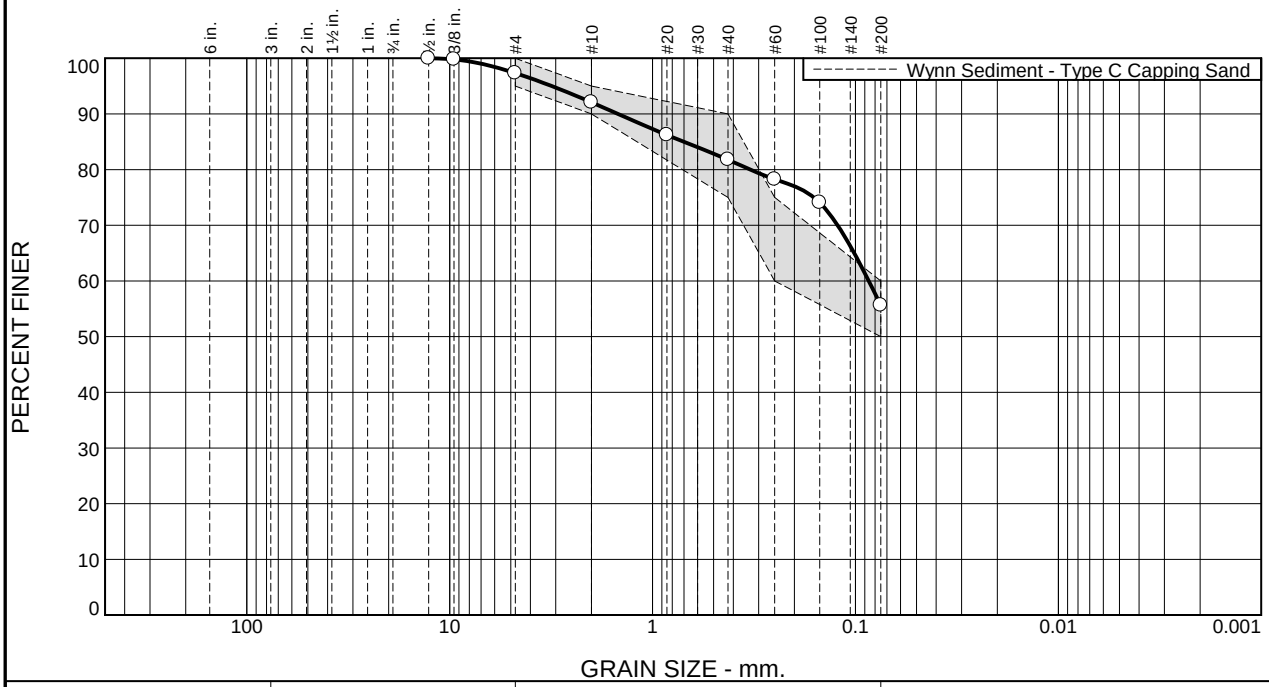
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 019

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-05

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.7	5.2	10.3	26.2	55.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.8		
#4	97.3	95.0 - 100.0	
#10	92.1	90.0 - 95.0	
#20	86.2		
#40	81.8	75.0 - 90.0	
#60	78.3	60.0 - 75.0	X
#100	74.1		
#200	55.6	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.4805 D_{85}= 0.7022 D_{60}= 0.0860
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

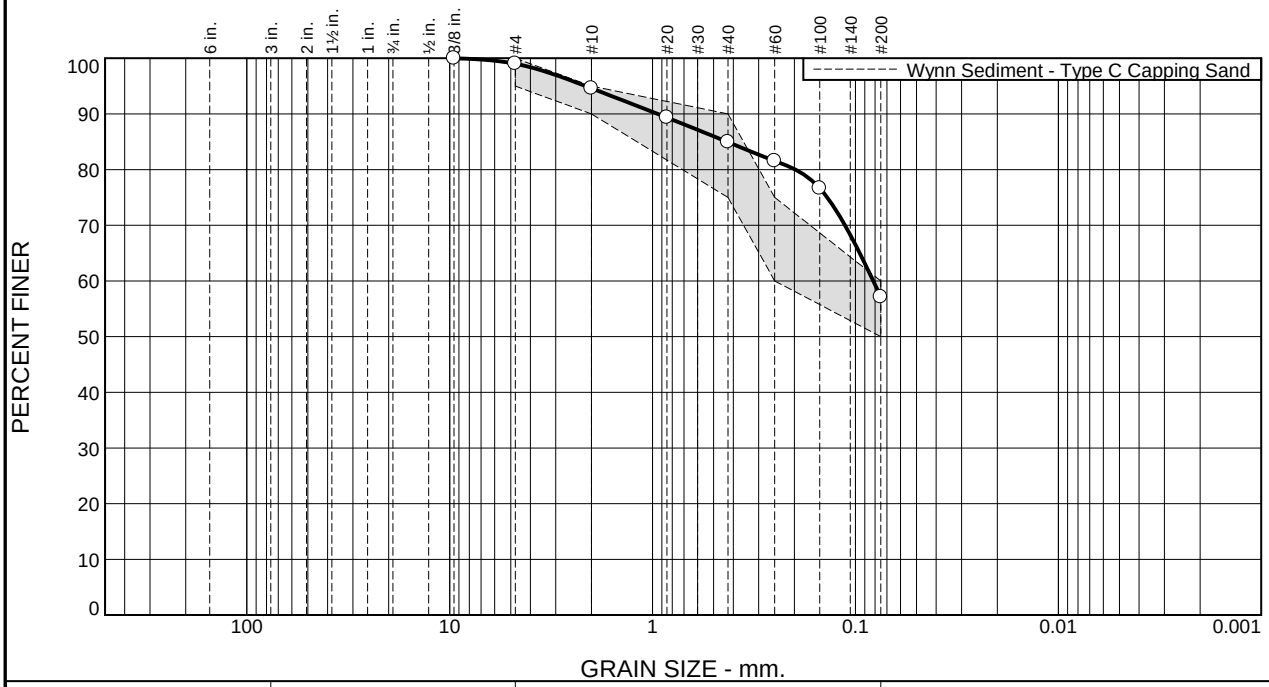
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 009

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-06

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	4.4	9.7	27.8	57.1	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.0	95.0 - 100.0	
#10	94.6	90.0 - 95.0	
#20	89.4		
#40	84.9	75.0 - 90.0	
#60	81.6	60.0 - 75.0	X
#100	76.6		
#200	57.1	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 0.9433 D_{85}= 0.4295 D_{60}= 0.0817
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

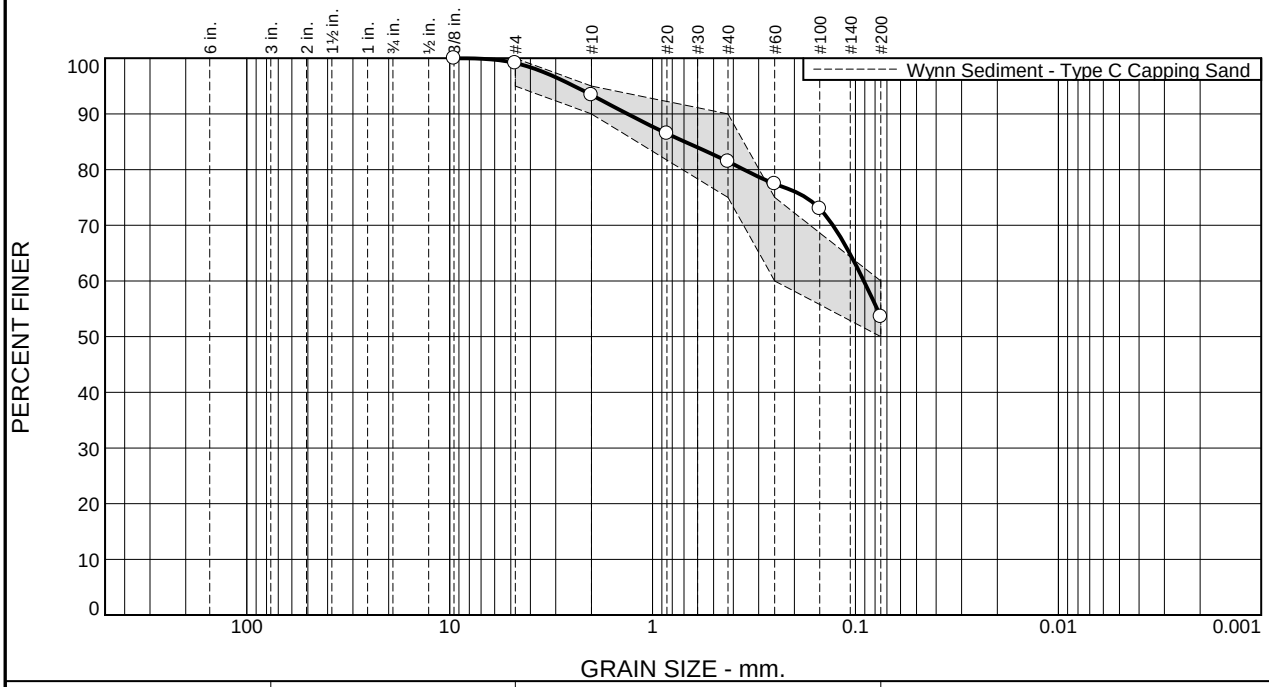
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 010

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-07

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	5.7	11.9	27.9	53.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.1	95.0 - 100.0	
#10	93.4	90.0 - 95.0	
#20	86.5		
#40	81.5	75.0 - 90.0	
#60	77.4	60.0 - 75.0	X
#100	73.0		
#200	53.6	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.3287 D_{85}= 0.6934 D_{60}= 0.0910
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

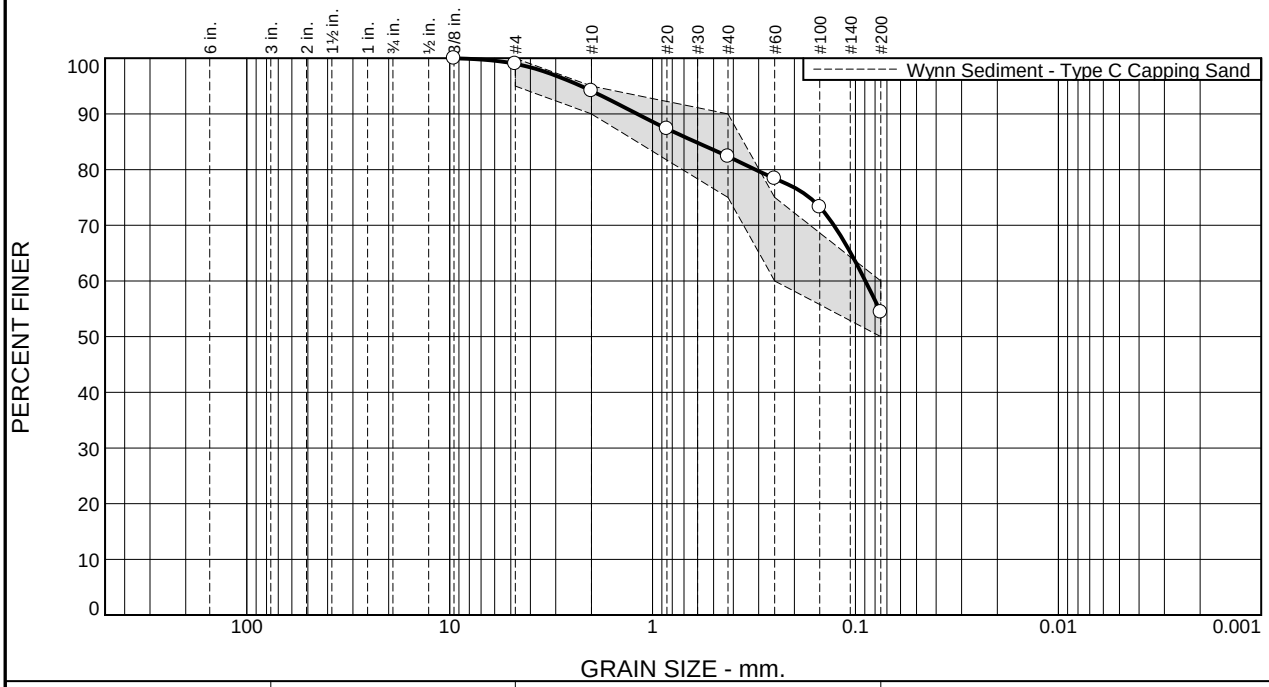
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 011

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-08

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	4.9	11.7	28.0	54.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.0	95.0 - 100.0	
#10	94.1	90.0 - 95.0	
#20	87.3		
#40	82.4	75.0 - 90.0	
#60	78.4	60.0 - 75.0	X
#100	73.3		
#200	54.4	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.1908 D_{85}= 0.6151 D_{60}= 0.0894
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

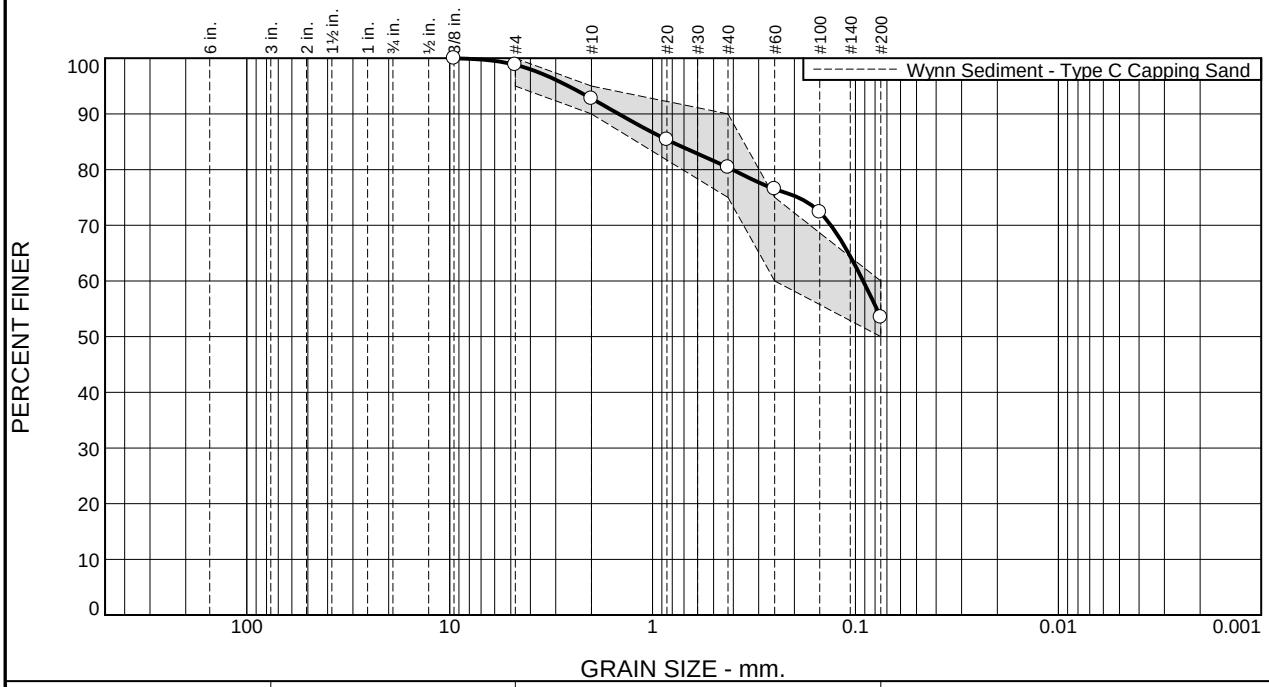
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 012

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-09

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	6.0	12.4	26.9	53.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.8	95.0 - 100.0	
#10	92.8	90.0 - 95.0	
#20	85.4		
#40	80.4	75.0 - 90.0	
#60	76.5	60.0 - 75.0	X
#100	72.4		
#200	53.5	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.4687 D_{85}= 0.8101 D_{60}= 0.0917
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.07.17 **Date Tested:** 12.11.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

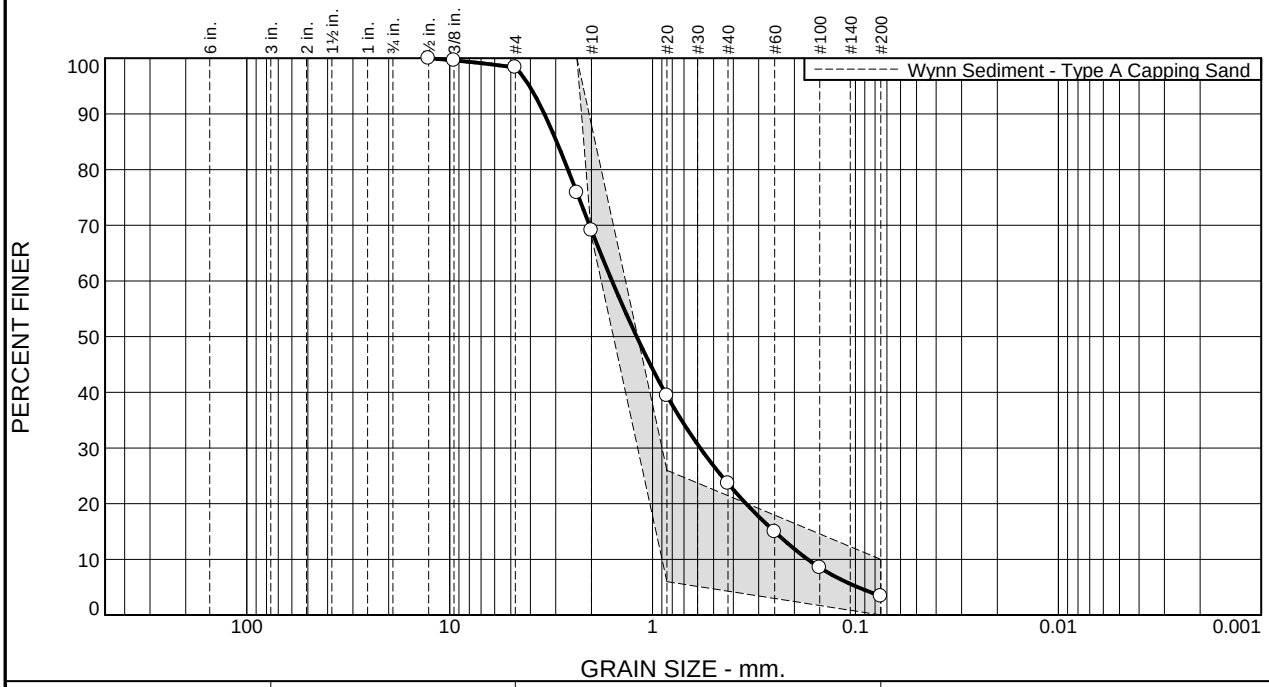
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 013

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1711794 **Figure** 1712171-10

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.7	29.2	45.5	20.2	3.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.6		
#4	98.3		
#8	75.9	100.0	X
#10	69.1	68.0 - 88.0	
#20	39.4	6.0 - 26.0	X
#40	23.6		
#60	14.9		
#100	8.5		
#200	3.4	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4137 D_{85}= 2.9681 D_{60}= 1.5846
D_{50}= 1.1975 D_{30}= 0.5827 D_{15}= 0.2509
D_{10}= 0.1720 C_u= 9.21 C_c= 1.25

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

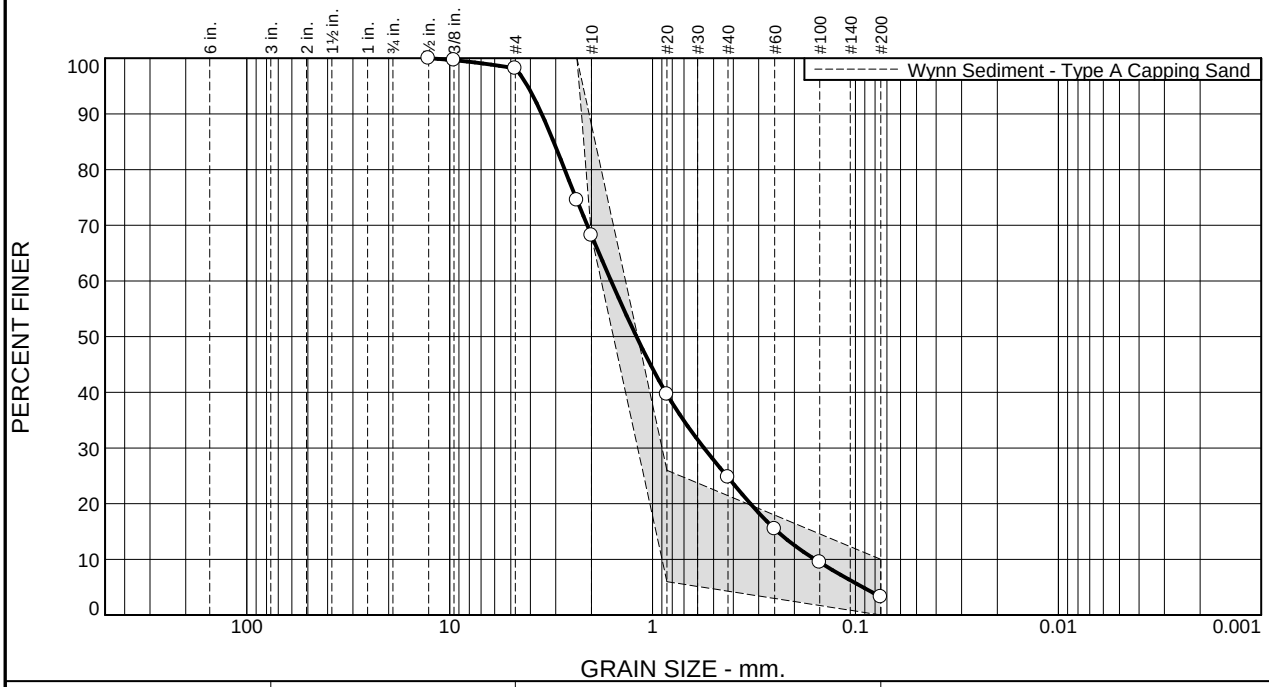
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 020

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.8	30.0	43.5	21.4	3.3	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.6		
#4	98.2		
#8	74.5	100.0	X
#10	68.2	68.0 - 88.0	
#20	39.7	6.0 - 26.0	X
#40	24.7		
#60	15.4		
#100	9.5		
#200	3.3	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.5173 D_{85}= 3.0738 D_{60}= 1.6013
D_{50}= 1.2002 D_{30}= 0.5578 D_{15}= 0.2424
D_{10}= 0.1584 C_u= 10.11 C_c= 1.23

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

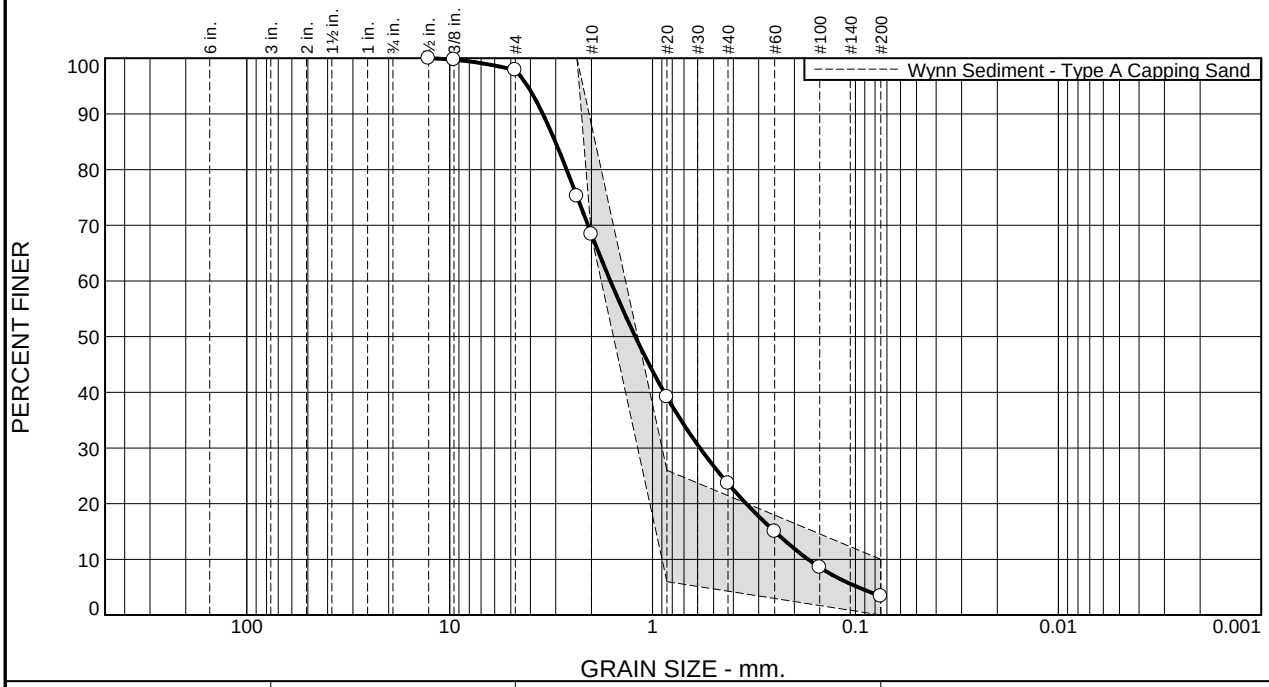
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 021

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-02

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	29.5	44.8	20.2	3.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.7		
#4	97.9		
#8	75.2	100.0	X
#10	68.4	68.0 - 88.0	
#20	39.2	6.0 - 26.0	X
#40	23.6		
#60	15.0		
#100	8.5		
#200	3.4	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4728 D_{85}= 3.0145 D_{60}= 1.6144
D_{50}= 1.2164 D_{30}= 0.5843 D_{15}= 0.2501
D_{10}= 0.1714 C_u= 9.42 C_c= 1.23

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

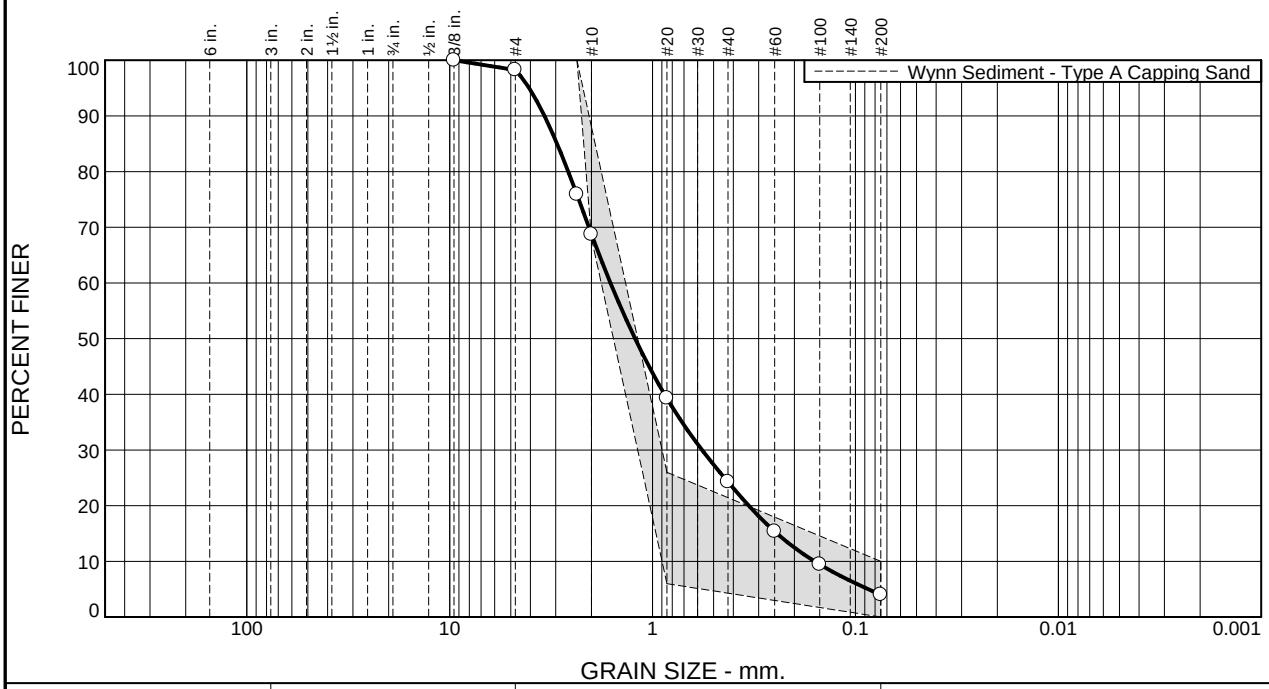
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 022

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-03

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.7	29.6	44.4	20.3	4.0	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.3		
#8	75.9	100.0	X
#10	68.7	68.0 - 88.0	
#20	39.3	6.0 - 26.0	X
#40	24.3		
#60	15.3		
#100	9.4		
#200	4.0	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4097 D_{85}= 2.9567 D_{60}= 1.6126
D_{50}= 1.2191 D_{30}= 0.5703 D_{15}= 0.2439
D_{10}= 0.1590 C_u= 10.14 C_c= 1.27

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

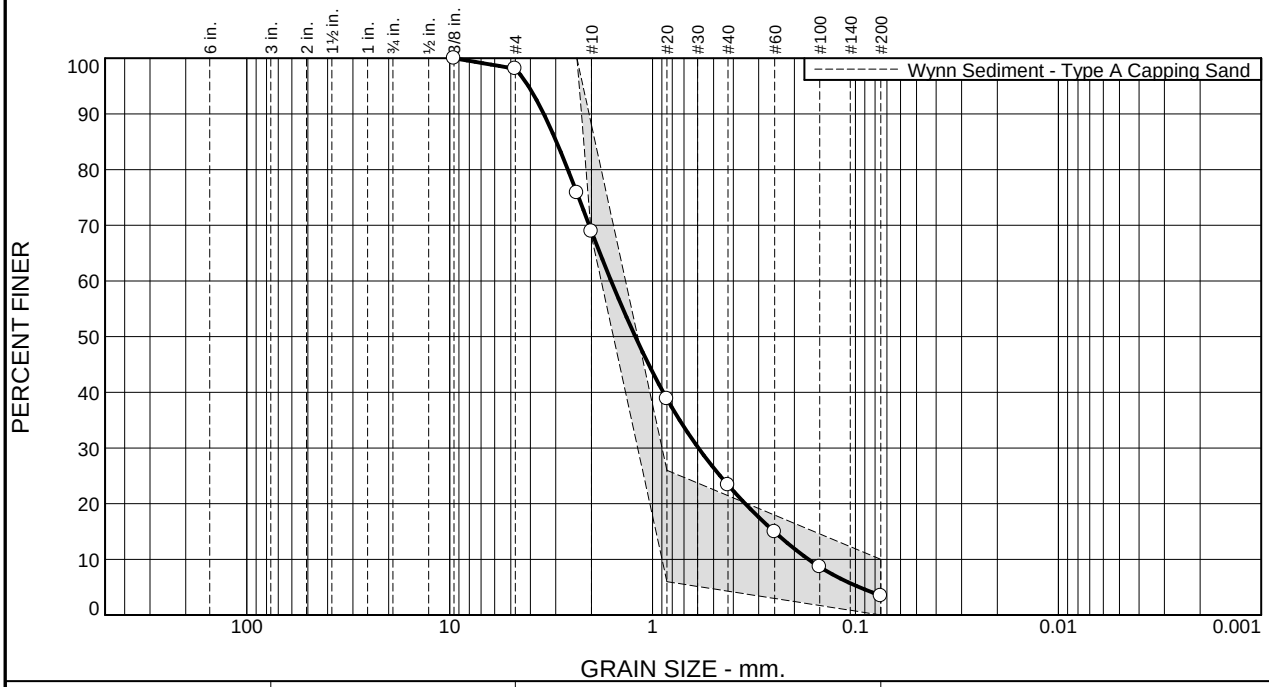
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 023

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-04

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	29.2	45.5	19.9	3.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.1		
#8	75.8	100.0	X
#10	68.9	68.0 - 88.0	
#20	38.8	6.0 - 26.0	X
#40	23.4		
#60	14.9		
#100	8.6		
#200	3.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Greyish Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4370 D_{85}= 2.9767 D_{60}= 1.6002
D_{50}= 1.2160 D_{30}= 0.5943 D_{15}= 0.2516
D_{10}= 0.1706 C_u= 9.38 C_c= 1.29

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

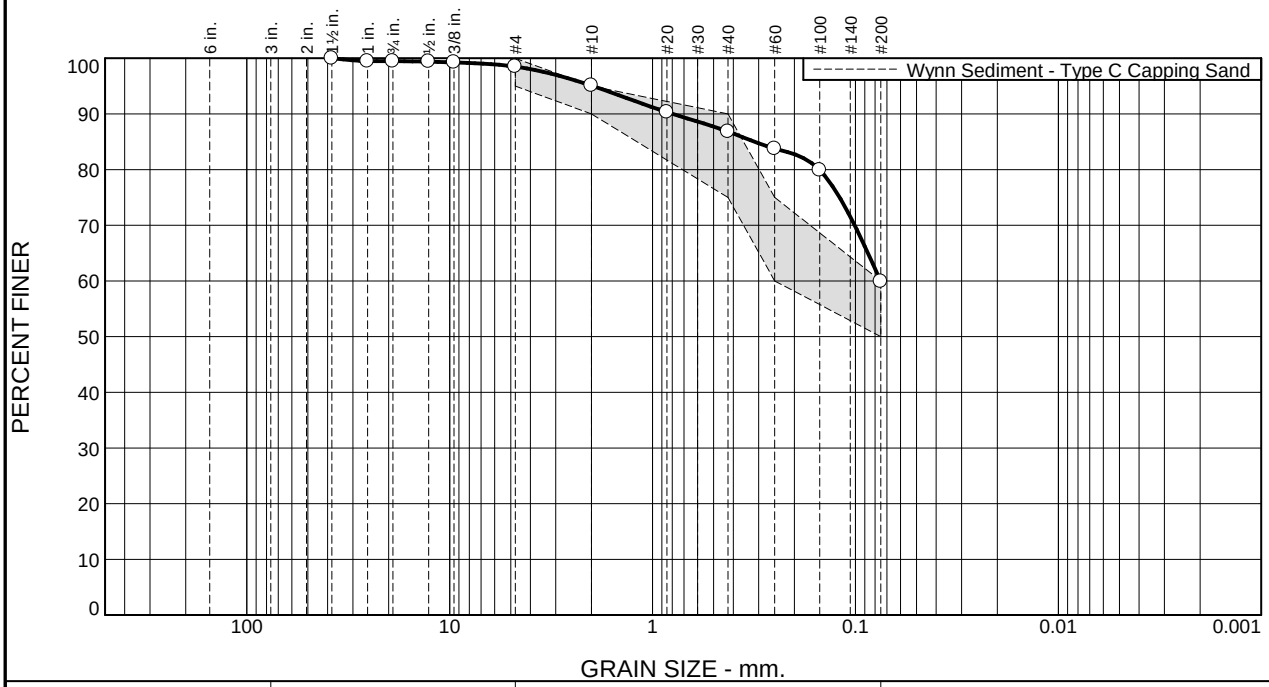
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type A - 024

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-05

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.5	1.0	3.4	8.3	26.9	59.9	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5"	100.0		
1"	99.5		
0.75"	99.5		
0.5"	99.4		
0.375"	99.2		
#4	98.5	95.0 - 100.0	
#10	95.1	90.0 - 95.0	X
#20	90.3		
#40	86.8	75.0 - 90.0	
#60	83.8	60.0 - 75.0	X
#100	79.9		
#200	59.9	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 0.7969 D_{85}= 0.3145 D_{60}= 0.0752
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

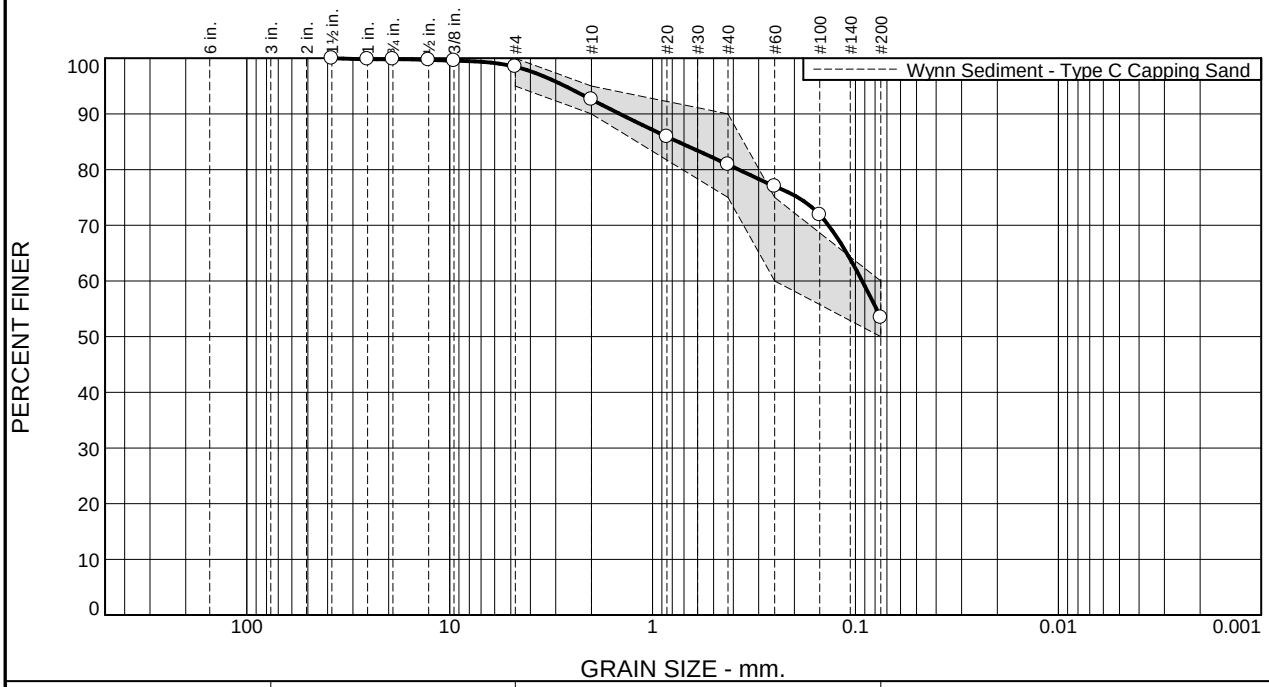
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 014

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-06

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.2	1.3	5.9	11.7	27.5	53.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5"	100.0		
1"	99.8		
0.75"	99.8		
0.5"	99.7		
0.375"	99.6		
#4	98.5	95.0 - 100.0	
#10	92.6	90.0 - 95.0	
#20	85.9		
#40	80.9	75.0 - 90.0	
#60	77.0	60.0 - 75.0	X
#100	71.9		
#200	53.4	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.4493 D_{85}= 0.7498 D_{60}= 0.0927
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

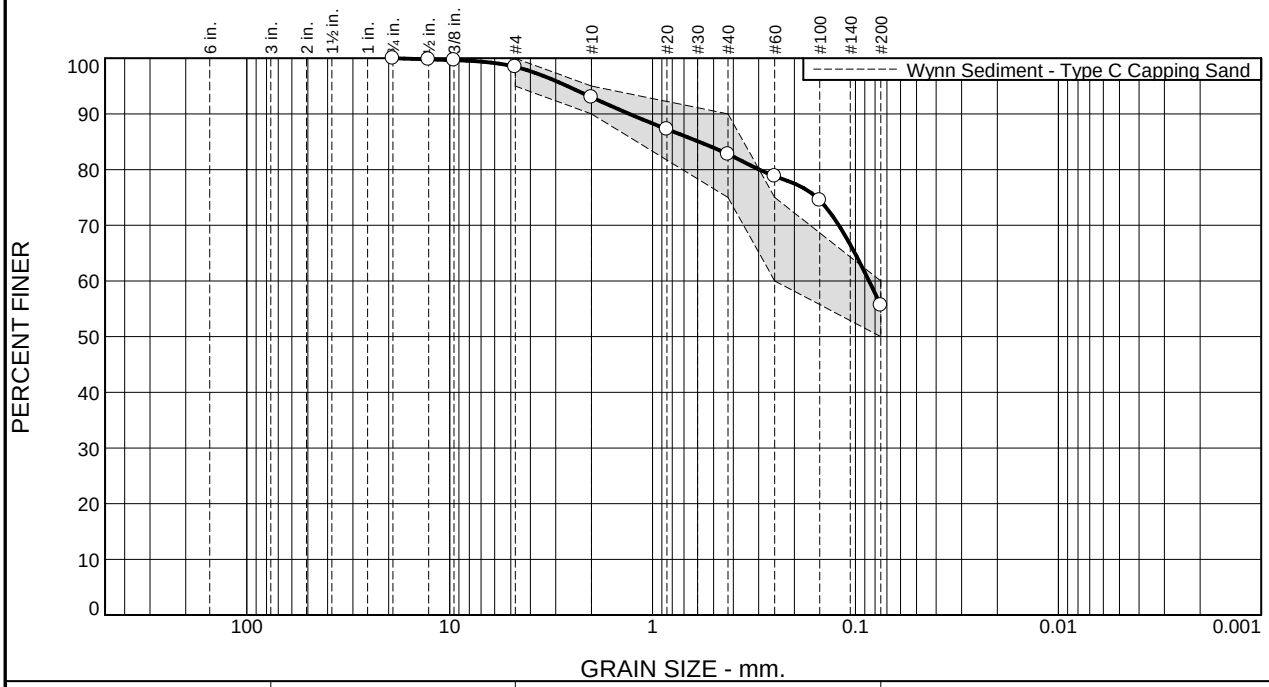
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 015

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-07

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	5.5	10.2	27.2	55.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.75"	100.0		
0.5"	99.8		
0.375"	99.6		
#4	98.5	95.0 - 100.0	
#10	93.0	90.0 - 95.0	
#20	87.3		
#40	82.8	75.0 - 90.0	
#60	78.8	60.0 - 75.0	X
#100	74.5		
#200	55.6	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.3013 D_{85}= 0.5896 D_{60}= 0.0857
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

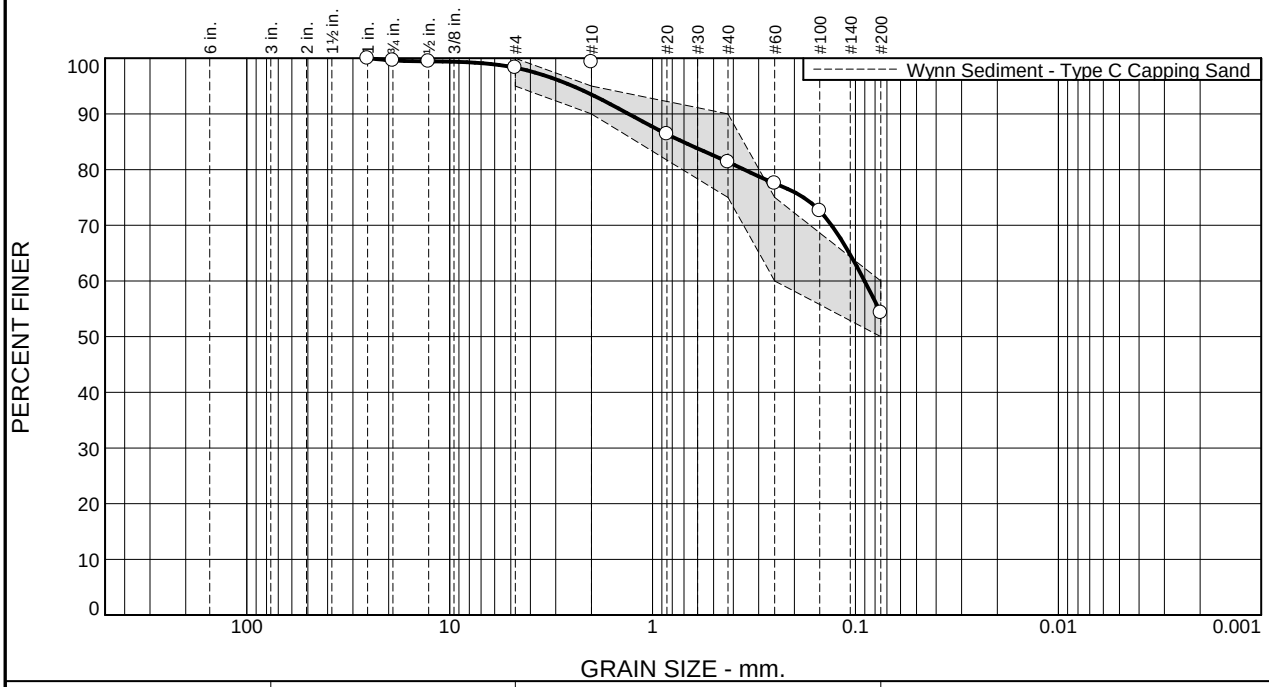
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 016

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-08

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.4	1.3	4.8	12.1	27.1	54.3	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1"	100.0		
0.75"	99.6		
0.5"	99.4		
#4	98.3	95.0 - 100.0	
#10	93.5	90.0 - 95.0	
#20	86.4		
#40	81.4	75.0 - 90.0	
#60	77.5	60.0 - 75.0	X
#100	72.6		
#200	54.3	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey silty sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.3125 D_{85}= 0.7094 D_{60}= 0.0902
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample contained one (1) large coarse gravel aggregate.

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

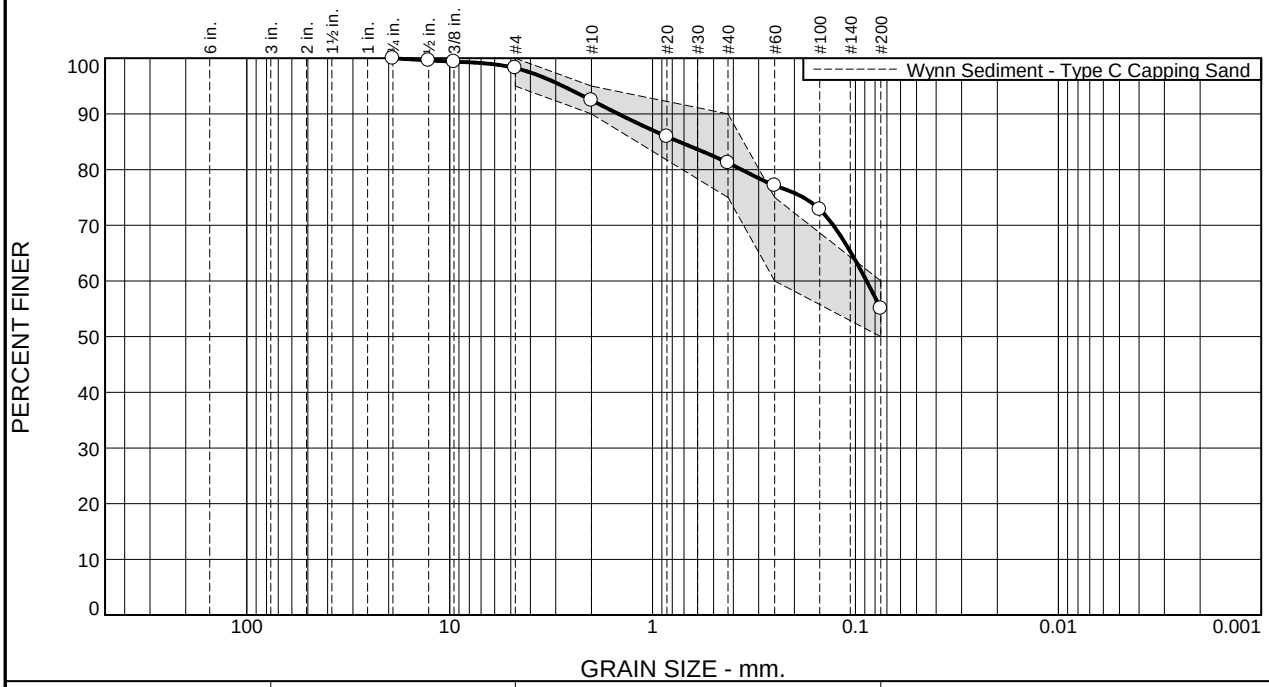
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 017

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-09

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.8	5.8	11.2	26.2	55.0	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.75"	100.0		
0.5"	99.6		
0.375"	99.4		
#4	98.2	95.0 - 100.0	
#10	92.4	90.0 - 95.0	
#20	85.9		
#40	81.2	75.0 - 90.0	
#60	77.2	60.0 - 75.0	X
#100	72.8		
#200	55.0	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.4730 D_{85}= 0.7397 D_{60}= 0.0882
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.08.17 **Date Tested:** 12.12.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
Sample Number: Type C - 018

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712199 **Figure** 1712199-10

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1712346

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 6:10 pm, Dec 19, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses
CTS - Cranston, RI — Grain Size Analysis, Soil Classification, Water Content

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

SAMPLE RECEIPT

The following samples were received on December 14, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Lab Number	Sample Name	Matrix	Analysis
1712346-01	Type C - Capping Sand -019	Soil	§
1712346-02	Type C - Capping Sand -020	Soil	§
1712346-03	Type C - Capping Sand -021	Soil	§
1712346-04	Type C - Capping Sand -022	Soil	§
1712346-05	Type C - Capping Sand -023	Soil	§
1712346-06	Type C - Capping Sand -024	Soil	§
1712346-07	Type C - Capping Sand -025	Soil	§
1712346-08	Type B - Capping Sand -001	Soil	§
1712346-09	Type B - Capping Sand -002	Soil	§
1712346-10	Type B - Capping Sand -003	Soil	§
1712346-11	Type B - Capping Sand -004	Soil	§

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -019
Date Sampled: 12/14/17 10:10

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-01
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -020
Date Sampled: 12/14/17 10:15

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-02
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -021
Date Sampled: 12/14/17 10:20

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-03
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -022
Date Sampled: 12/14/17 10:25

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-04
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -023
Date Sampled: 12/14/17 10:30

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-05
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -024
Date Sampled: 12/14/17 10:35

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-06
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -025
Date Sampled: 12/14/17 10:40

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-07
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand -001
Date Sampled: 12/14/17 10:45

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-08
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand -002
Date Sampled: 12/14/17 10:50

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-09
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand -003
Date Sampled: 12/14/17 10:55

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-10
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand -004
Date Sampled: 12/14/17 11:00

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-11
Sample Matrix: Soil

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Grain Size	**See Attached** (N/A)								
Soil Classification	**See Attached** (N/A)								
Water by Distillation	**See Attached** (1)								

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712346

Notes and Definitions

Z-08	See Attached
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

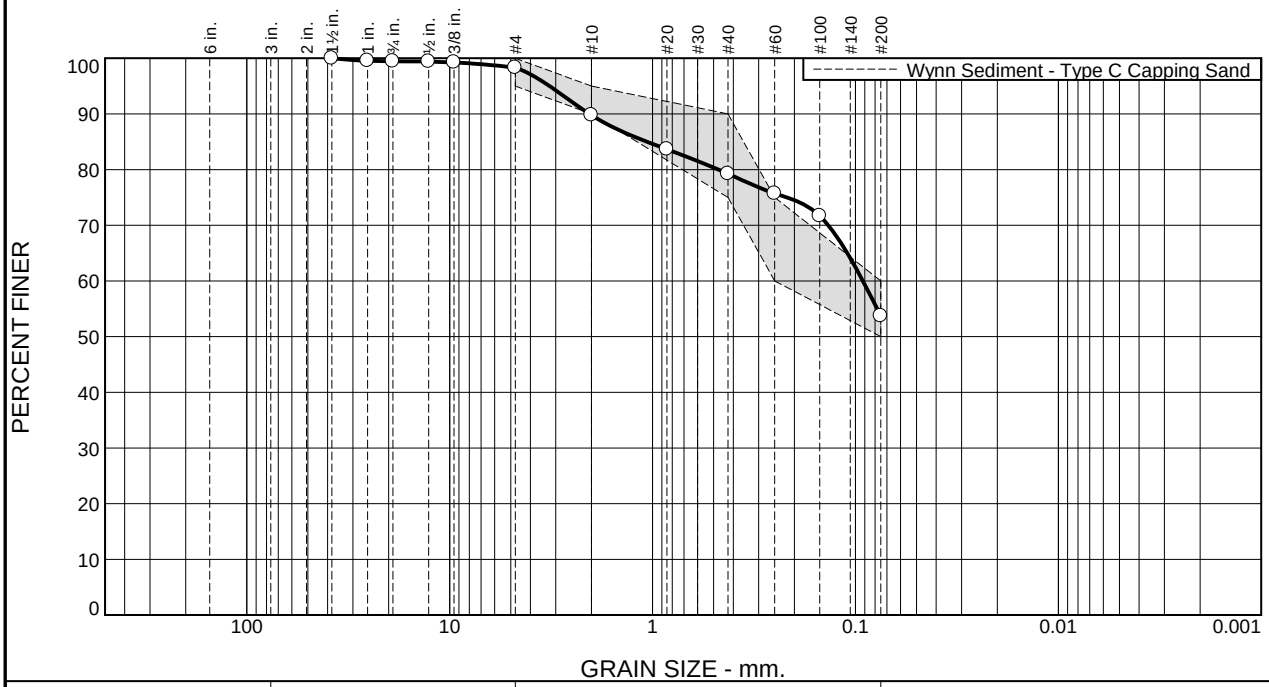
THIELSCH ENGINEERING	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 http://www.thielsch.com	Client Information: Charter Contracting Boston, MA PM: Marc Levesque Assigned By: Marc Levesque	Laboratory Information Project Name: **Wynn Boston Harbor Sediment Remediation** **Boston, MA** ESS Project Number: 1712348 Report Date: 12.19.17

LABORATORY TESTING DATA SHEET

Boring ID	ESS Sample No.	Depth (ft)	CTS Laboratory No.	Identification Tests							Density		Strength Tests				
				Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Setup as % of Proctor	CBR Dry unit wt. pcf	CBR Water Content %	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
Type C - Capping Sand - 019	1712346-01	Stock	17-S-2013	7.2			1.7	44.6	53.7								Grey sandy silt
Type C - Capping Sand - 020	1712346-02	Stock	17-S-2014	8.0			1.8	44.5	53.7								Grey sandy silt
Type C - Capping Sand - 021	1712346-03	Stock	17-S-2015	8.4			1.6	46.2	52.2								Grey sandy silt
Type C- Capping Sand - 022	1712346-04	Stock	17-S-2016	10.9			1.6	43.3	55.1								Grey sandy silt
Type C - Capping Sand - 023	1712346-05	Stock	17-S-2017	10.2			1.4	43.3	55.3								Grey sandy silt
Type C - Capping Sand - 024	1712346-06	Stock	17-S-2018	7.3			1.3	47.3	51.4								Grey sandy silt
Type C - Capping Sand - 025	1712346-07	Stock	17-S-2019	6.5			1.6	44.8	53.6								Grey sandy silt
Type B - Capping Sand - 001	1712346-08	Stock	17-S-2020	2.5			59.9	34.9	5.2								Grey poorly graded gravel with silt and sand
Type B - Capping Sand - 002	1712346-09	Stock	17-S-2021	2.5			61.4	33.8	4.8								Grey well-graded gravel with sand
Type B - Capping Sand - 003	1712346-10	Stock	17-S-2022	2.8			60.6	34.3	5.1								Grey poorly graded gravel with silt and sand
Type B - Capping Sand - 004	1712346-11	Stock	17-S-2023	2.7			60.8	33.5	5.7								Grey poorly graded gravel with silt and sand

Reviewed By _____ Date Revised: *12.19.17*

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.5	1.2	8.5	10.5	25.6	53.7	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5"	100.0		
1"	99.5		
0.75"	99.5		
0.5"	99.4		
0.375"	99.2		
#4	98.3	95.0 - 100.0	
#10	89.8	90.0 - 95.0	X
#20	83.7		
#40	79.3	75.0 - 90.0	
#60	75.7	60.0 - 75.0	X
#100	71.7		
#200	53.7	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 2.0479 D_{85}= 1.0659 D_{60}= 0.0919
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.14.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

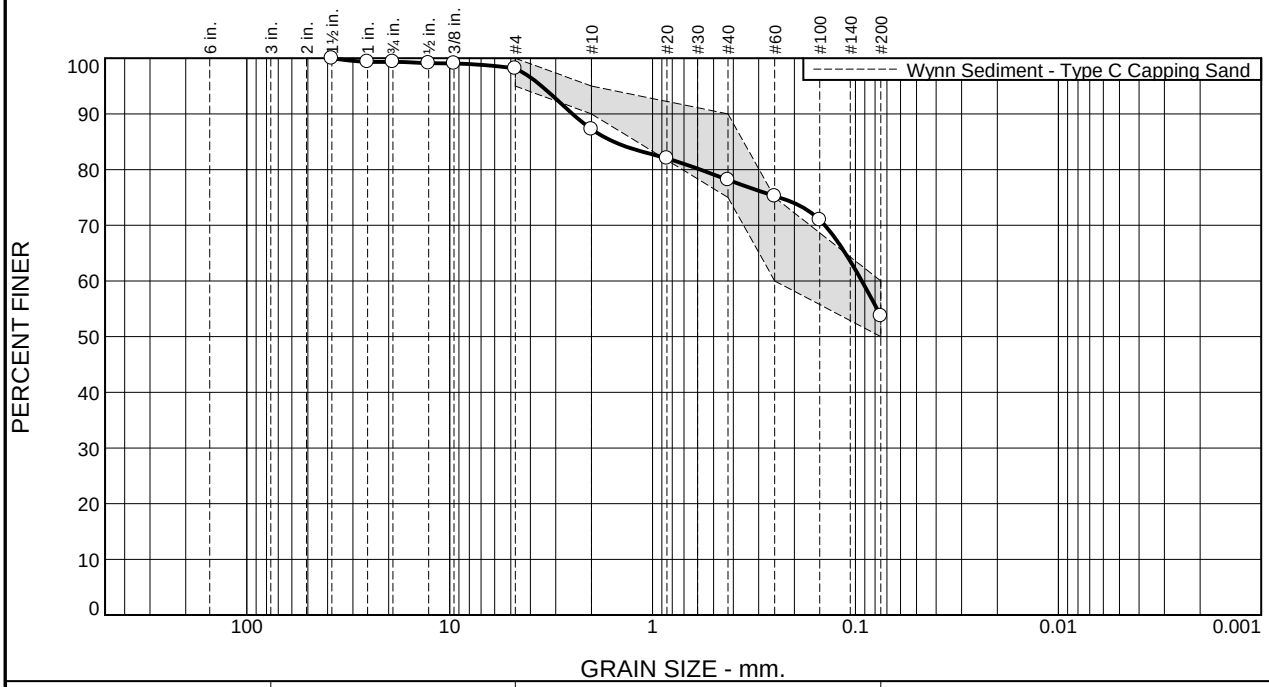
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type C - 019

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.7	1.1	10.9	9.1	24.5	53.7	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5"	100.0		
1"	99.3		
0.75"	99.3		
0.5"	99.1		
0.375"	99.1		
#4	98.2	95.0 - 100.0	
#10	87.3	90.0 - 95.0	X
#20	82.0		
#40	78.2	75.0 - 90.0	
#60	75.2	60.0 - 75.0	X
#100	70.9		
#200	53.7	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 2.4798 D_{85}= 1.5538 D_{60}= 0.0930
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.14.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

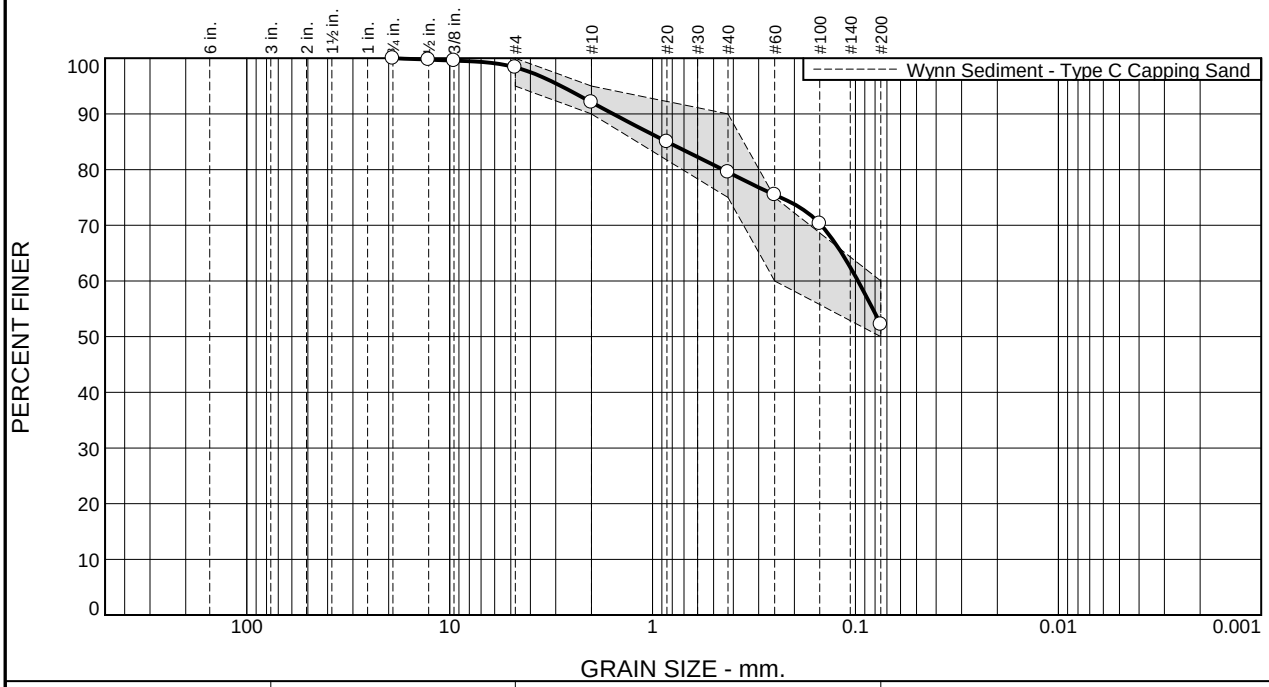
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type C - 020

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-02

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	6.3	12.6	27.3	52.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.75"	100.0		
0.5"	99.8		
0.375"	99.6		
#4	98.4	95.0 - 100.0	
#10	92.1	90.0 - 95.0	
#20	85.0		
#40	79.5	75.0 - 90.0	
#60	75.5	60.0 - 75.0	X
#100	70.3		
#200	52.2	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.5654 D_{85}= 0.8487 D_{60}= 0.0972
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

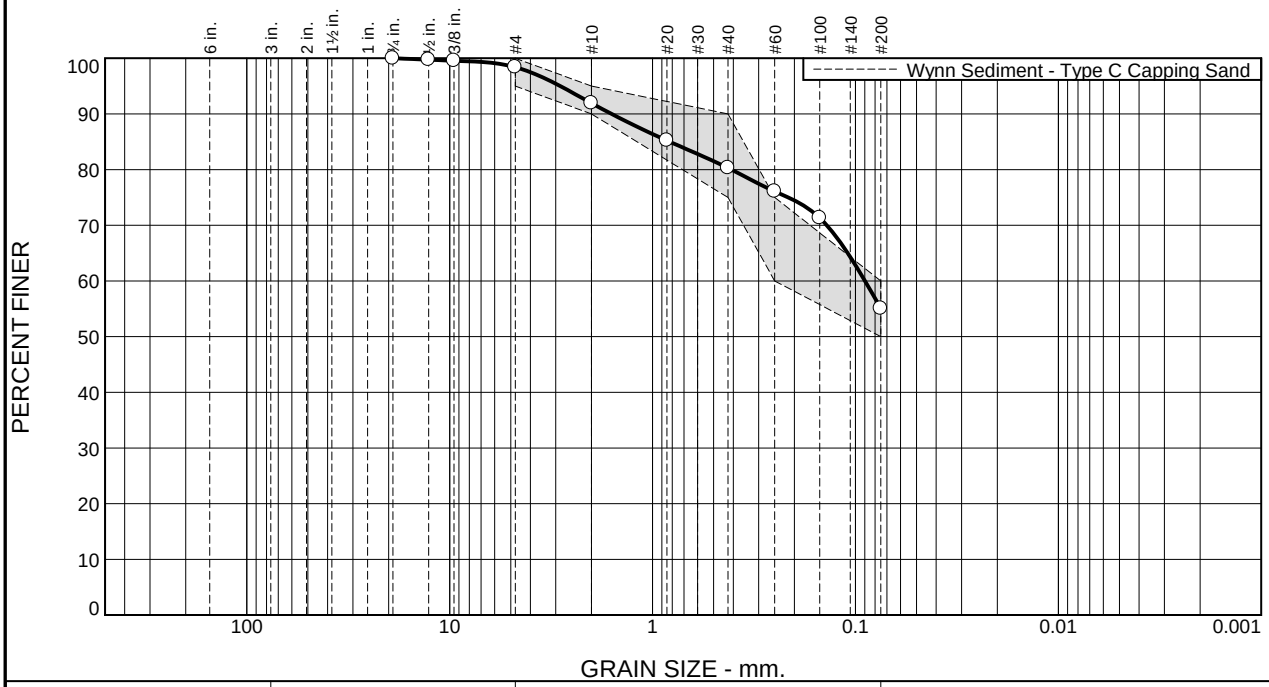
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type C - 021

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-03

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	6.5	11.6	25.2	55.1	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.75"	100.0		
0.5"	99.7		
0.375"	99.5		
#4	98.4	95.0 - 100.0	
#10	91.9	90.0 - 95.0	
#20	85.2		
#40	80.3	75.0 - 90.0	
#60	76.1	60.0 - 75.0	X
#100	71.3		
#200	55.1	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.5919 D_{85}= 0.8242 D_{60}= 0.0898
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

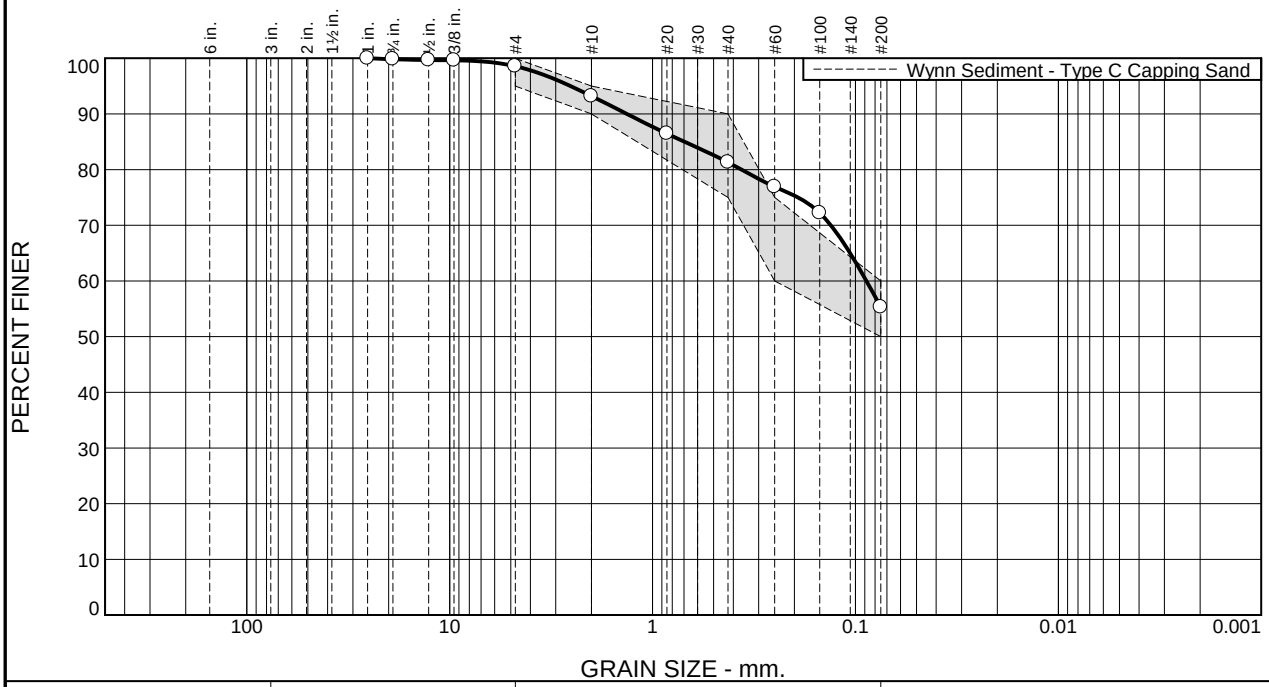
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type C - 022

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-04

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.2	1.2	5.4	11.9	26.0	55.3	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1"	100.0		
0.75"	99.8		
0.5"	99.7		
0.375"	99.6		
#4	98.6	95.0 - 100.0	
#10	93.2	90.0 - 95.0	
#20	86.5		
#40	81.3	75.0 - 90.0	
#60	76.9	60.0 - 75.0	X
#100	72.2		
#200	55.3	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 1.3386 D_{85}= 0.6957 D_{60}= 0.0883
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

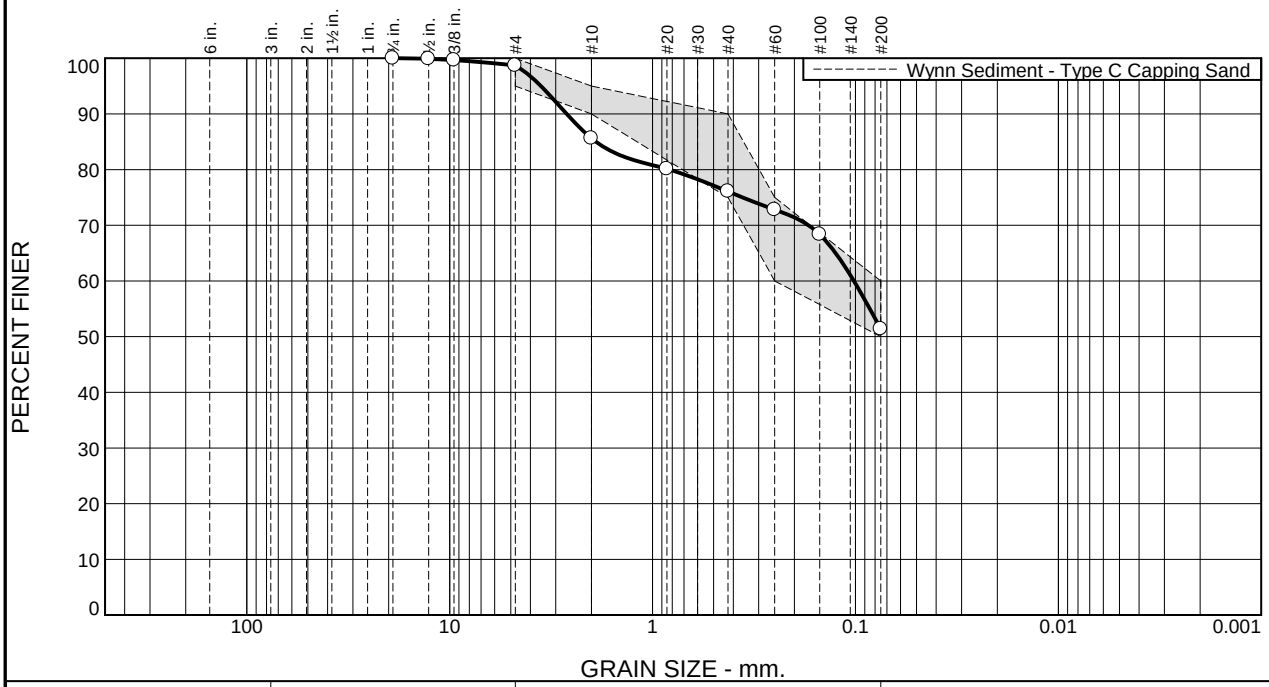
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type C - 023

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-05

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	13.1	9.5	24.7	51.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.75"	100.0		
0.5"	99.9		
0.375"	99.7		
#4	98.7	95.0 - 100.0	
#10	85.6	90.0 - 95.0	X
#20	80.1		
#40	76.1	75.0 - 90.0	
#60	72.8	60.0 - 75.0	
#100	68.4		
#200	51.4	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 2.6500 D_{85}= 1.9020 D_{60}= 0.1018
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

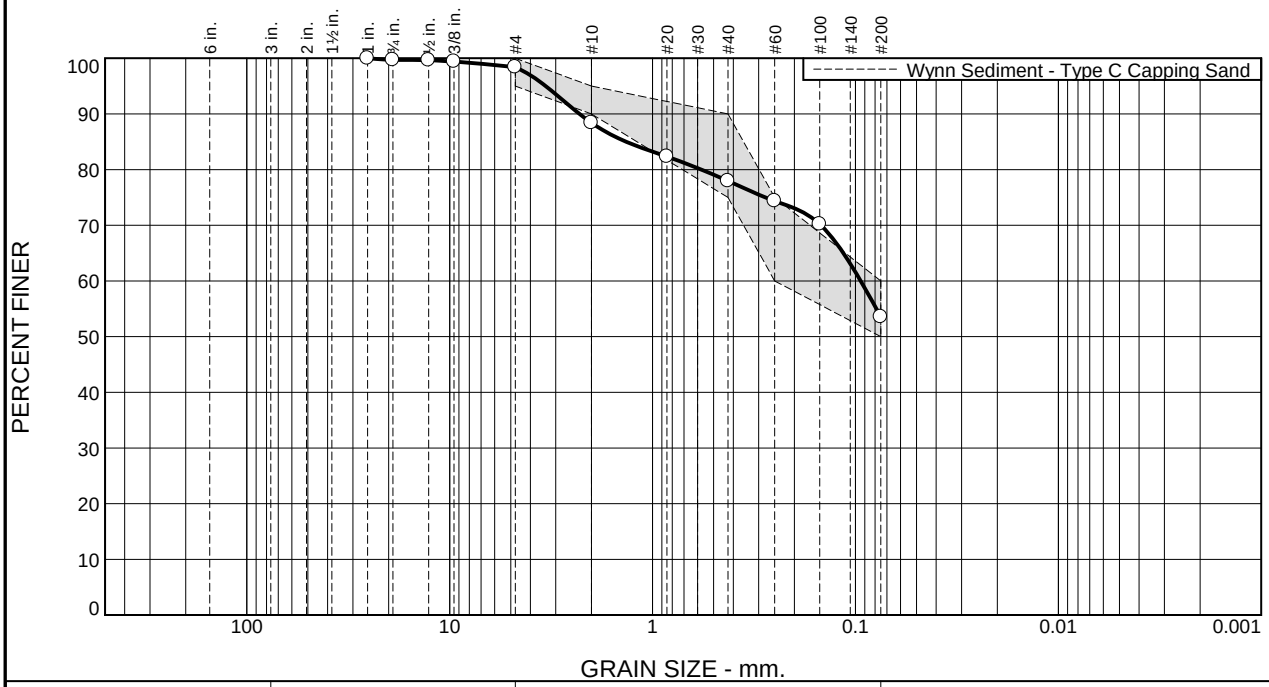
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type C - 024

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-06

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.3	1.3	10.0	10.4	24.4	53.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1"	100.0		
0.75"	99.7		
0.5"	99.7		
0.375"	99.4		
#4	98.4	95.0 - 100.0	
#10	88.4	90.0 - 95.0	X
#20	82.3		
#40	78.0	75.0 - 90.0	
#60	74.4	60.0 - 75.0	
#100	70.2		
#200	53.6	50.0 - 60.0	

* Wynn Sediment - Type C Capping Sand

Material Description

Grey sandy silt

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 2.2924 D_{85}= 1.3473 D_{60}= 0.0942
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

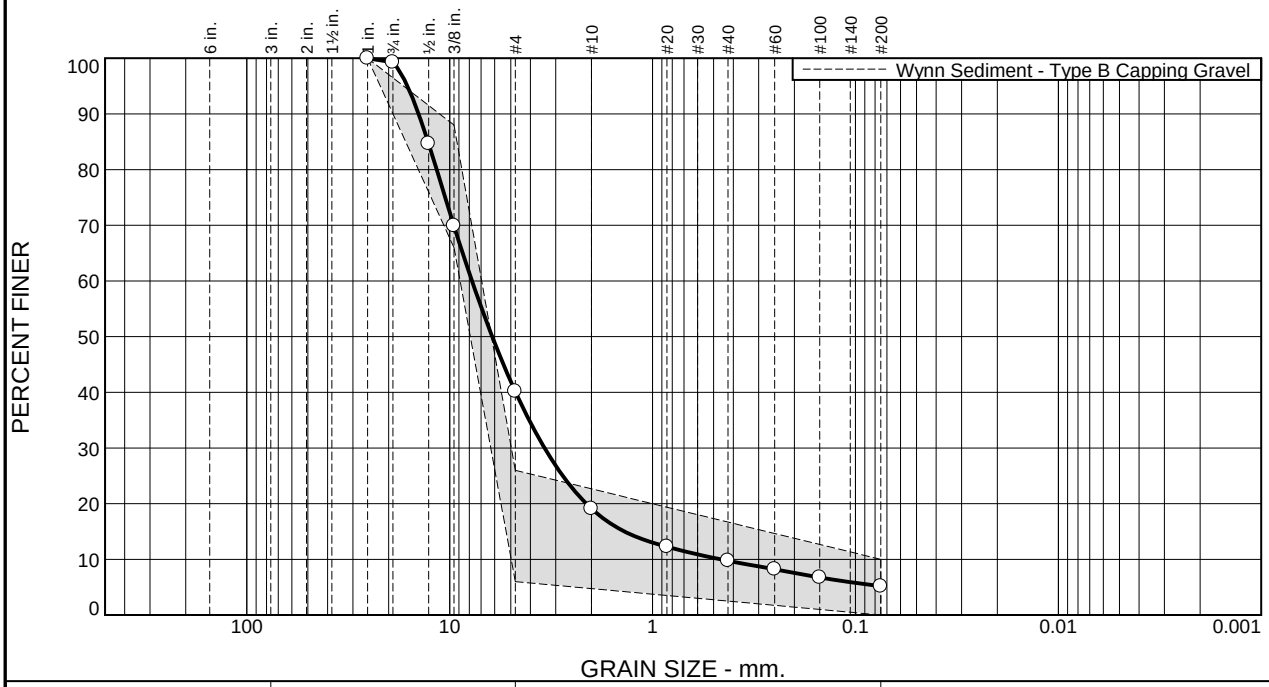
Source of Sample: Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type C - 025

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-07

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.7	59.2	21.0	9.4	4.5	5.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1"	100.0	100.0	
0.75"	99.3		
0.5"	84.6		
0.375"	69.9	66.0 - 88.0	
#4	40.1	6.0 - 26.0	X
#10	19.1		
#20	12.3		
#40	9.7		
#60	8.2		
#100	6.7		
#200	5.2	0.0 - 10.0	

* Wynn Sediment - Type B Capping Gravel

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= GP-GM **AASHTO (M 145)=** A-1-a

Coefficients

D_{90}= 14.2294 D_{85}= 12.7914 D_{60}= 7.7646
D_{50}= 6.1694 D_{30}= 3.4069 D_{15}= 1.3759
D_{10}= 0.4614 C_u= 16.83 C_c= 3.24

Remarks

Date Received: 12.14.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

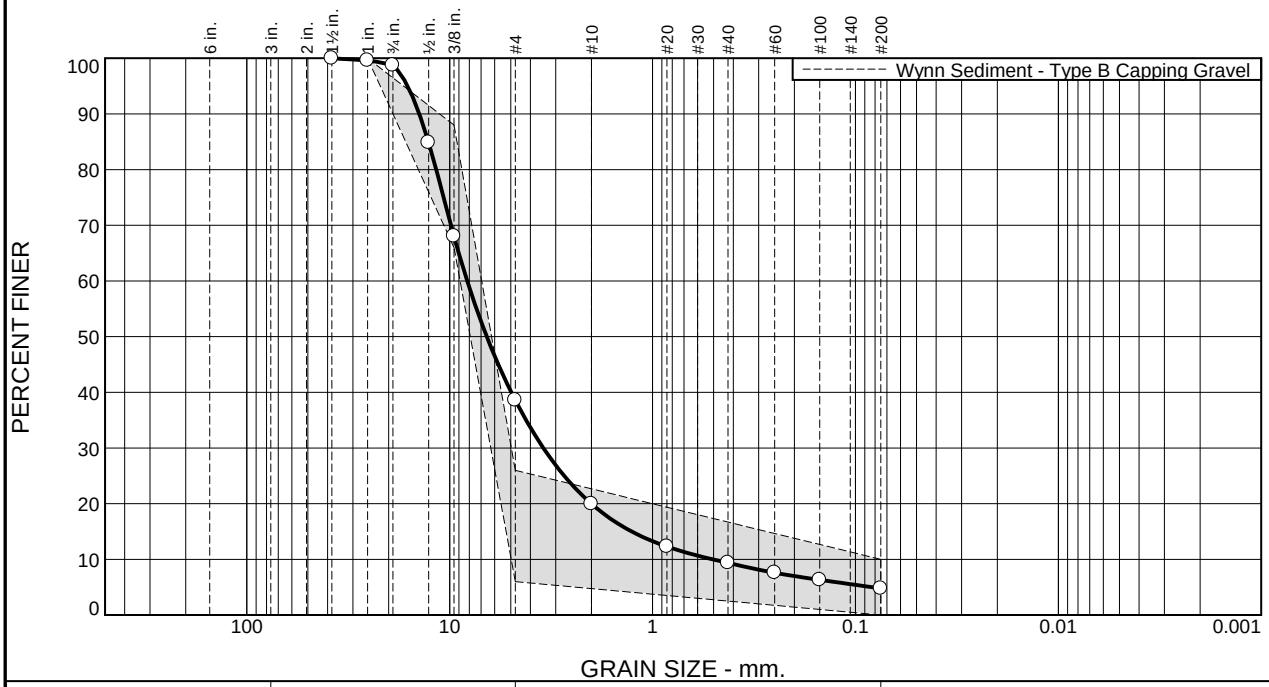
Source of Sample: Tybe B Capping Gravel **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type B - 001

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-08

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.2	60.2	18.6	10.6	4.6	4.8	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5"	100.0		
1"	99.6	100.0	X
0.75"	98.8		
0.5"	84.9		
0.375"	68.0	66.0 - 88.0	
#4	38.6	6.0 - 26.0	X
#10	20.0		
#20	12.3		
#40	9.4		
#60	7.6		
#100	6.3		
#200	4.8	0.0 - 10.0	

* Wynn Sediment - Type B Capping Gravel

Material Description

Grey well-graded gravel with sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= GW **AASHTO (M 145)=** A-1-a

Coefficients

D_{90}= 14.1162 D_{85}= 12.7339 D_{60}= 8.1958
D_{50}= 6.5652 D_{30}= 3.4539 D_{15}= 1.2682
D_{10}= 0.5057 C_u= 16.21 C_c= 2.88

Remarks

Date Received: 12.14.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

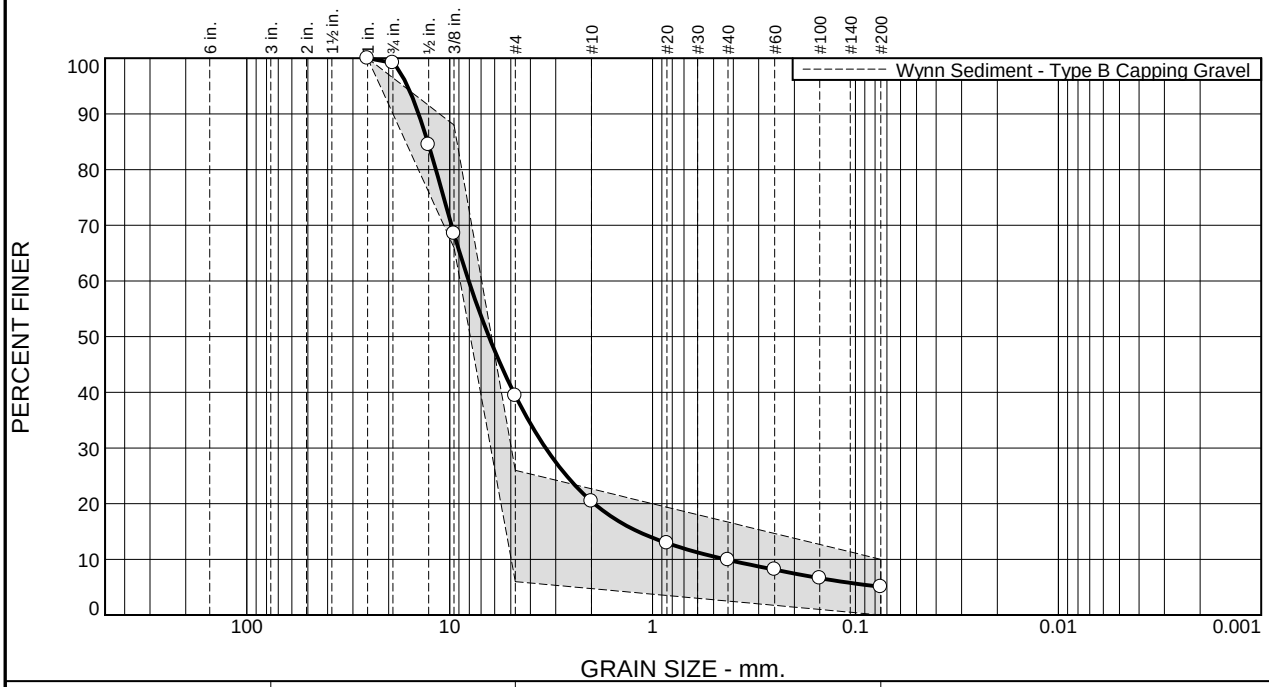
Source of Sample: Tybe B Capping Gravel **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type B - 002

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-09

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.8	59.8	19.0	10.5	4.8	5.1	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1"	100.0	100.0	
0.75"	99.2		
0.5"	84.5		
0.375"	68.5	66.0 - 88.0	
#4	39.4	6.0 - 26.0	X
#10	20.4		
#20	12.9		
#40	9.9		
#60	8.2		
#100	6.6		
#200	5.1	0.0 - 10.0	

* Wynn Sediment - Type B Capping Gravel

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= GP-GM **AASHTO (M 145)=** A-1-a

Coefficients

D_{90}= 14.2242 D_{85}= 12.8312 D_{60}= 8.0584
D_{50}= 6.4065 D_{30}= 3.3646 D_{15}= 1.1805
D_{10}= 0.4375 C_u= 18.42 C_c= 3.21

Remarks

Date Received: 12.14.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

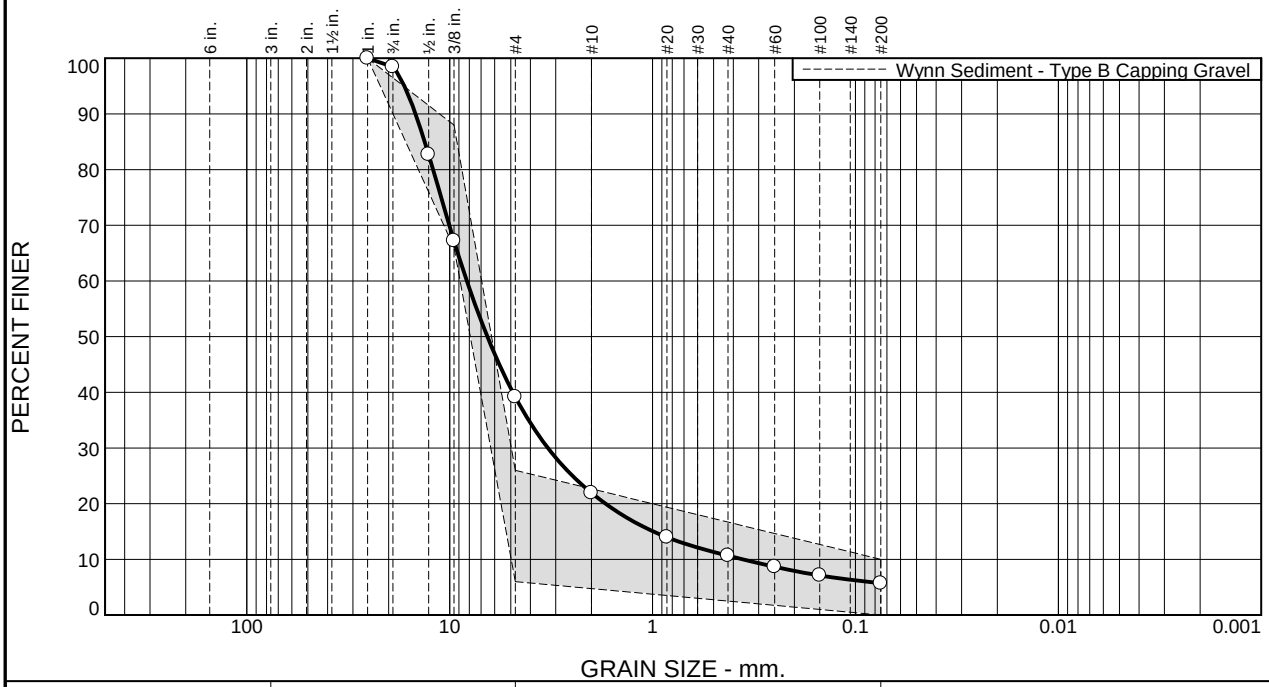
Source of Sample: Tybe B Capping Gravel **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type B - 003

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-10

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.5	59.3	17.3	11.2	5.0	5.7	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1"	100.0	100.0	
0.75"	98.5		
0.5"	82.7		
0.375"	67.2	66.0 - 88.0	
#4	39.2	6.0 - 26.0	X
#10	21.9		
#20	14.0		
#40	10.7		
#60	8.7		
#100	7.1		
#200	5.7	0.0 - 10.0	

* Wynn Sediment - Type B Capping Gravel

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= GP-GM **AASHTO (M 145)=** A-1-a

Coefficients

D_{90}= 14.7350 D_{85}= 13.2775 D_{60}= 8.2323
D_{50}= 6.5207 D_{30}= 3.2807 D_{15}= 0.9909
D_{10}= 0.3593 C_u= 22.91 C_c= 3.64

Remarks

Date Received: 12.14.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

Source of Sample: Tybe B Capping Gravel **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type B - 004

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712346-11

SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
ESS Project No. 1712346
Project Manager Marc Levesque
Date Received 12/14/2017 (by)

Client Company Charter
Client Email
Site Location
Date Assigned 12/14/2017

Collected By
Date Required 12/19/2017

Sample Information				Lab No.	Identification Tests								Permeability		Compaction			Soil Strength			Consol.		Notes
Boring/ Test Pit No.	Sample or depth	Sample date	ESS Sample ID		Water Cont. %	LL & PL %	Org. %	Bulk	Sieve -200 %	Hyd -2μ %	G_s	Tube Den-sity	Sand	Clay	Mod.	Std.	CBR	Un-con-fined	UU	CIU	Stand ard	E.O.P.	
					D2216	D4318	D2974		D422		D854		D2434	D5084	D1557	D698	D1883	D2166	D2850	D4767	D2435	D2435	#
Type C - Capping Sand - 019		12/14/17	1712346-01		X				X														**
Type C - Capping Sand - 020		12/14/17	1712346-02		X				X														**
Type C - Capping Sand - 021		12/14/17	1712346-03		X				X														**
Type C - Capping Sand - 022		12/14/17	1712346-04		X				X														**
Type C - Capping Sand - 023		12/14/17	1712346-05		X				X														**
Type C - Capping Sand - 024		12/14/17	1712346-06		X				X														**
Type C - Capping Sand - 025		12/14/17	1712346-07		X				X														**
Type B - Capping Sand - 001		12/14/17	1712346-08		X				X														**
Type B - Capping Sand - 002		12/14/17	1712346-09		X				X														**
Type B - Capping Sand - 003		12/14/17	1712346-10		X				X														**
Type B - Capping Sand - 004		12/15/17	1712346-11		X				X														

Notes: ** = D2487 Material Classification

Changes made 12/15/17 - ML

ESS Laboratory

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185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

3047 SOB 12/14/17

ESS Lab #	1712346
Turn Time	5-Day Rush
Regulatory State	
Reporting Limits	S-1
Electonic Deliverables	☑ Limit Checker ☐ Standard Excel ☐ Other (Please Specify →)

Is this project for any of the following?: ○ CT RCP ◉ MA MCP ○ RGP

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

	ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
1	01 11	12/14/17	10:10 AM	Grab	Soil	Type C - Capping Sand - 019	X	X	X	X	X	X	X	X	X	X	X
2	02 12	12/14/17	10:15 AM	Grab	Soil	Type C - Capping Sand - 020	X	X	X	X	X	X	X	X	X	X	X
3	03 13	12/14/17	10:20 AM	Grab	Soil	Type C - Capping Sand - 021	X	X	X	X	X	X	X	X	X	X	X
4	04 14	12/14/17	10:25 AM	Grab	Soil	Type C - Capping Sand - 022	X	X	X	X	X	X	X	X	X	X	X
5	05 15	12/14/17	10:30 AM	Grab	Soil	Type C - Capping Sand - 023	X	X	X	X	X	X	X	X	X	X	X
6	06 16	12/14/17	10:35 AM	Grab	Soil	Type C - Capping Sand - 024	X	X	X	X	X	X	X	X	X	X	X
7	07 17	12/14/17	10:40 AM	Grab	Soil	Type C - Capping Sand - 025	X	X	X	X	X	X	X	X	X	X	X
8	08 18	12/14/17	10:45 AM	Grab	Soil	Type B - Capping Sand - 001	X	X	X	X	X	X	X	X	X	X	X
9	09 19	12/14/17	10:50 AM	Grab	Soil	Type B - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
10	10 20	12/14/17	10:55 AM	Grab	Soil	Type B - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:
Seals Intact: Tim 12/3.3
Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: Please specify "Other" preservative and containers types in this space

~~Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.~~
Gradation on A 1st. Then, proceed analytical & gradation B & C

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
12/14	12/14/17 12pm	12/14/17 15:34	12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilson SPS			

Changes made 12/15/17 - ML

3 DAT SUB
W 12/14/17

ESS Laboratory

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185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time	5-Day Rush
Regulatory State	
Is this project for any of the following?	○CT RCP ◉MA MCP ○RGP
ESS Lab #	1712346
Reporting Limits	S-1
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
11 01 21	12/14/17	11:00 AM	Grab	Soil	Type B - Capping Sand - 004	X	X	X	X	X	X	X	X	X	X	X
12 02 22	12/14/17		Grab	Soil	TB Vials											

W 12/14/17

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim Ice 3.3

Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then, proceed analytical & gradation B & C.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12/14	[signature] 12/14/17 12pm	[signature] 12/14/17 15:34	[signature] 12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton, SPS			

ESS Laboratory

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Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

3DAY SOB 12/14/17

ESS Lab #	1712346
Turn Time	5-Day Rush
Regulatory State	
Reporting Limits	S-1
Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

	ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
1	01 11	12/14/17	10:10 AM	Grab	Soil	Type C - Capping Sand - 019	X	X	X	X	X	X	X	X	X	X	X
2	02 12	12/14/17	10:15 AM	Grab	Soil	Type C - Capping Sand - 020	X	X	X	X	X	X	X	X	X	X	X
3	03 13	12/14/17	10:20 AM	Grab	Soil	Type C - Capping Sand - 021	X	X	X	X	X	X	X	X	X	X	X
4	04 14	12/14/17	10:25 AM	Grab	Soil	Type C - Capping Sand - 022	X	X	X	X	X	X	X	X	X	X	X
5	05 15	12/14/17	10:30 AM	Grab	Soil	Type C - Capping Sand - 023	X	X	X	X	X	X	X	X	X	X	X
6	06 16	12/14/17	10:35 AM	Grab	Soil	Type C - Capping Sand - 024	X	X	X	X	X	X	X	X	X	X	X
7	07 17	12/14/17	10:40 AM	Grab	Soil	Type C - Capping Sand - 025	X	X	X	X	X	X	X	X	X	X	X
8	08 18	12/14/17	10:45 AM	Grab	Soil	Type B - Capping Sand - 001	X	X	X	X	X	X	X	X	X	X	X
9	09 19	12/14/17	10:50 AM	Grab	Soil	Type B - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X
10	10 20	12/14/17	10:55 AM	Grab	Soil	Type B - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim Ice 3.3

Cooler Temperature: °C

Sampled by: Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Gradation on A 1st. Then, proceed analytical & gradation B & C

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12/14	[signature] 12/14/17 12pm	[signature] 12/14/17 15:34	[signature] 12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton SPS			

3 DAY SUB
W 12/14/17

ESS Laboratory

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www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time	5-Day Rush
Regulatory State	
Is this project for any of the following?	○CT RCP ◉MA MCP ○RGP
ESS Lab #	1712346
Reporting Limits	S-1
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
11 01 21	12/14/17	11:00 AM	Grab	Soil	Type B - Capping Sand - 004	X	X	X	X	X	X	X	X	X	X	X
12 02 22	12/14/17		Grab	Soil	TB Vials											
W 12/14/17																

Analysis

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim Ice 3.3

Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then, proceed analytical & gradation B & C.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12/14	[signature] 12/14/17 12pm	[signature] 12/14/17 15:34	[signature] 12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton, SPS			

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1712348

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:53 pm, Dec 19, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses
CTS - Cranston, RI — Grain Size Analysis, Soil Classification, Water Content

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

SAMPLE RECEIPT

The following samples were received on December 14, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Lab Number	Sample Name	Matrix	Analysis
1712348-01	Type A - Capping Sand - 025	Soil	§
1712348-02	Type A - Capping Sand - 026	Soil	§
1712348-03	Type A - Capping Sand - 027	Soil	§
1712348-04	Type A - Capping Sand - 028	Soil	§
1712348-05	Type A - Capping Sand - 029	Soil	§
1712348-06	Type A - Capping Sand - 030	Soil	§
1712348-07	Type A - Capping Sand - 031	Soil	§
1712348-08	Type A - Capping Sand - 032	Soil	§
1712348-09	Type A - Capping Sand - 033	Soil	§
1712348-10	Type A - Capping Sand - 034	Soil	§

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

Classical Chemistry

Client Sample ID: Type A - Capping Sand - 025
Date Sampled: 12/14/17 09:30

ESS Laboratory Sample ID: 1712348-01
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A - Capping Sand - 026
Date Sampled: 12/14/17 09:34

ESS Laboratory Sample ID: 1712348-02
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A - Capping Sand - 027
Date Sampled: 12/14/17 09:38

ESS Laboratory Sample ID: 1712348-03
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A - Capping Sand - 028
Date Sampled: 12/14/17 09:42

ESS Laboratory Sample ID: 1712348-04
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

Classical Chemistry

Client Sample ID: Type A - Capping Sand - 029
Date Sampled: 12/14/17 09:46

ESS Laboratory Sample ID: 1712348-05
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A - Capping Sand - 030
Date Sampled: 12/14/17 09:50

ESS Laboratory Sample ID: 1712348-06
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A - Capping Sand - 031
Date Sampled: 12/14/17 09:54

ESS Laboratory Sample ID: 1712348-07
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A - Capping Sand - 032
Date Sampled: 12/14/17 09:58

ESS Laboratory Sample ID: 1712348-08
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

Classical Chemistry

Client Sample ID: Type A - Capping Sand - 033
Date Sampled: 12/14/17 10:02

ESS Laboratory Sample ID: 1712348-09
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A - Capping Sand - 034
Date Sampled: 12/14/17 10:06

ESS Laboratory Sample ID: 1712348-10
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712348

Notes and Definitions

Z-08	See Attached
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

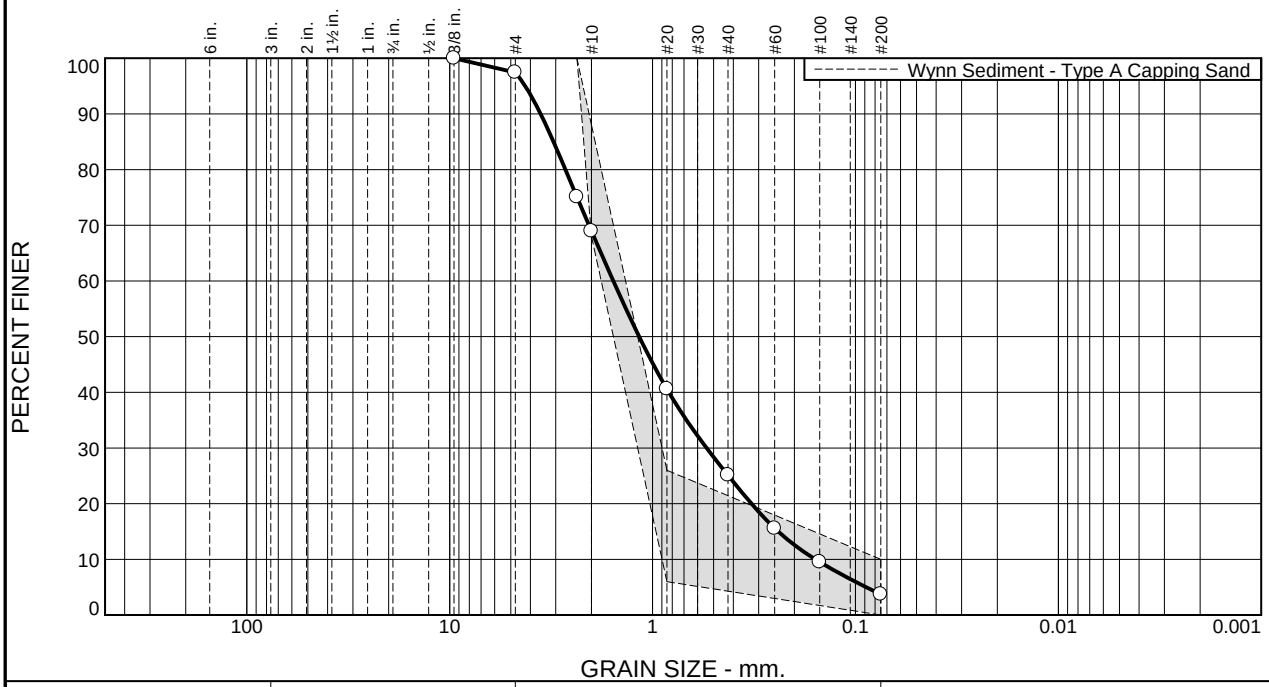
THIELSCH ENGINEERING	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 http://www.thielsch.com	Client Information: Charter Contracting Boston, MA PM: Marc Levesque Assigned By: Marc Levesque	Laboratory Information Project Name: **Wynn Boston Harbor Sediment Remediation** **Boston, MA** ESS Project Number: 1712348 Report Date: 12.19.17

LABORATORY TESTING DATA SHEET

Boring ID	ESS Sample No.	Depth (ft)	CTS Laboratory No.	Identification Tests							Density		Strength Tests				
				Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Setup as % of Proctor	CBR Dry unit wt. pcf	CBR Water Content %	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
Type A - Capping Sand - 025	1712348-01	Stock	17-S-1928	2.5			2.5	93.8	3.7								Brown well-graded sand (SW)
Type A - Capping Sand - 026	1712348-02	Stock	17-S-1929	2.7			1.5	94.9	3.6								Brown well-graded sand (SW)
Type A - Capping Sand - 027	1712348-03	Stock	17-S-1930	3.7			1.0	94.2	4.8								Brown well-graded sand (SW)
Type A - Capping Sand - 028	1712348-04	Stock	17-S-1931	2.9			1.3	94.7	4.0								Brown well-graded sand (SW)
Type A - Capping Sand - 029	1712348-05	Stock	17-S-1932	2.7			1.4	94.6	4.0								Brown well-graded sand (SW)
Type A - Capping Sand - 030	1712348-06	Stock	17-S-1933	3.0			1.5	94.4	4.1								Brown well-graded sand (SW)
Type A - Capping Sand - 031	1712348-07	Stock	17-S-1934	3.0			1.2	95.1	3.7								Brown well-graded sand (SW)
Type A - Capping Sand - 032	1712348-08	Stock	17-S-1935	2.8			1.5	94.8	3.7								Brown well-graded sand (SW)
Type A - Capping Sand - 033	1712348-09	Stock	17-S-1936	3.7			0.8	94.3	4.9								Brown well-graded sand (SW)
Type A - Capping Sand - 034	1712348-10	Stock	17-S-1937	3.5			1.6	93.9	4.5								Brown well-graded sand (SW)

Reviewed By _____ Date Revised: *12.19.17*

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.5	28.5	43.9	21.4	3.7	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	97.5		
#8	75.1	100.0	X
#10	69.0	68.0 - 88.0	
#20	40.6	6.0 - 26.0	X
#40	25.1		
#60	15.6		
#100	9.5		
#200	3.7	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.5609 D_{85}= 3.0772 D_{60}= 1.5613
D_{50}= 1.1641 D_{30}= 0.5416 D_{15}= 0.2405
D_{10}= 0.1575 C_u= 9.92 C_c= 1.19

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

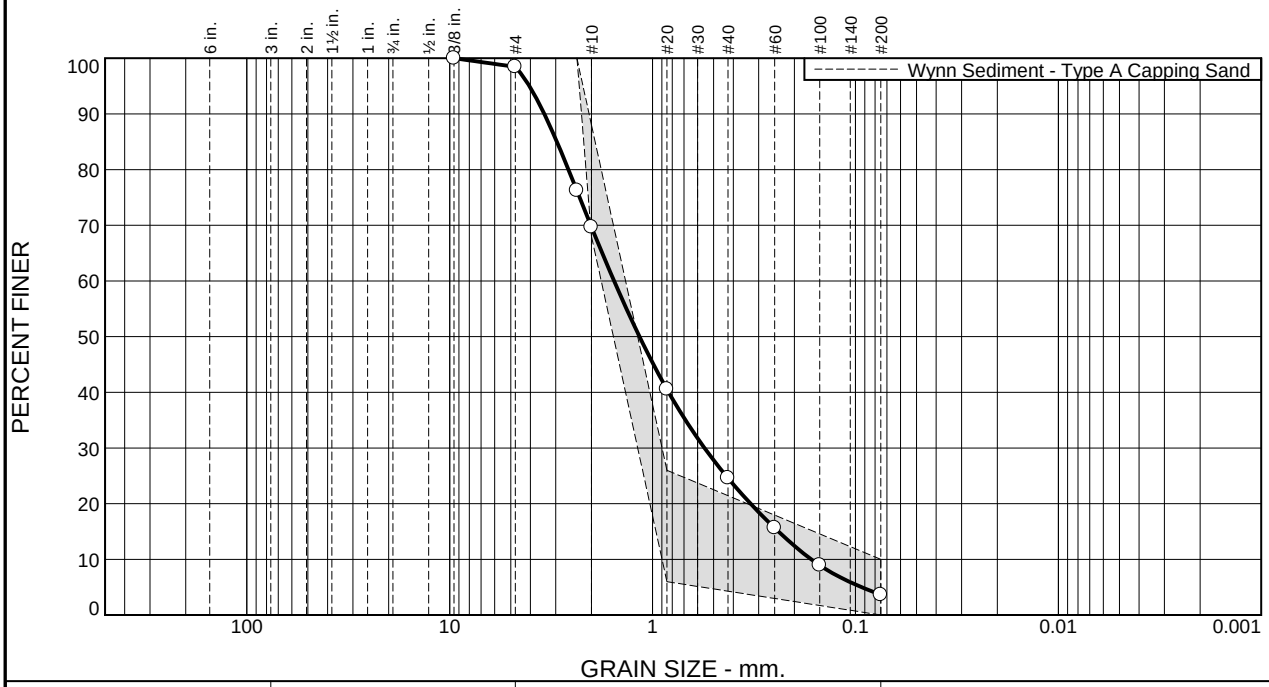
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 025

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	28.8	45.1	21.0	3.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.5		
#8	76.2	100.0	X
#10	69.7	68.0 - 88.0	
#20	40.5	6.0 - 26.0	X
#40	24.6		
#60	15.6		
#100	8.9		
#200	3.6	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4159 D_{85}= 2.9619 D_{60}= 1.5477
D_{50}= 1.1598 D_{30}= 0.5545 D_{15}= 0.2396
D_{10}= 0.1652 C_u= 9.37 C_c= 1.20

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

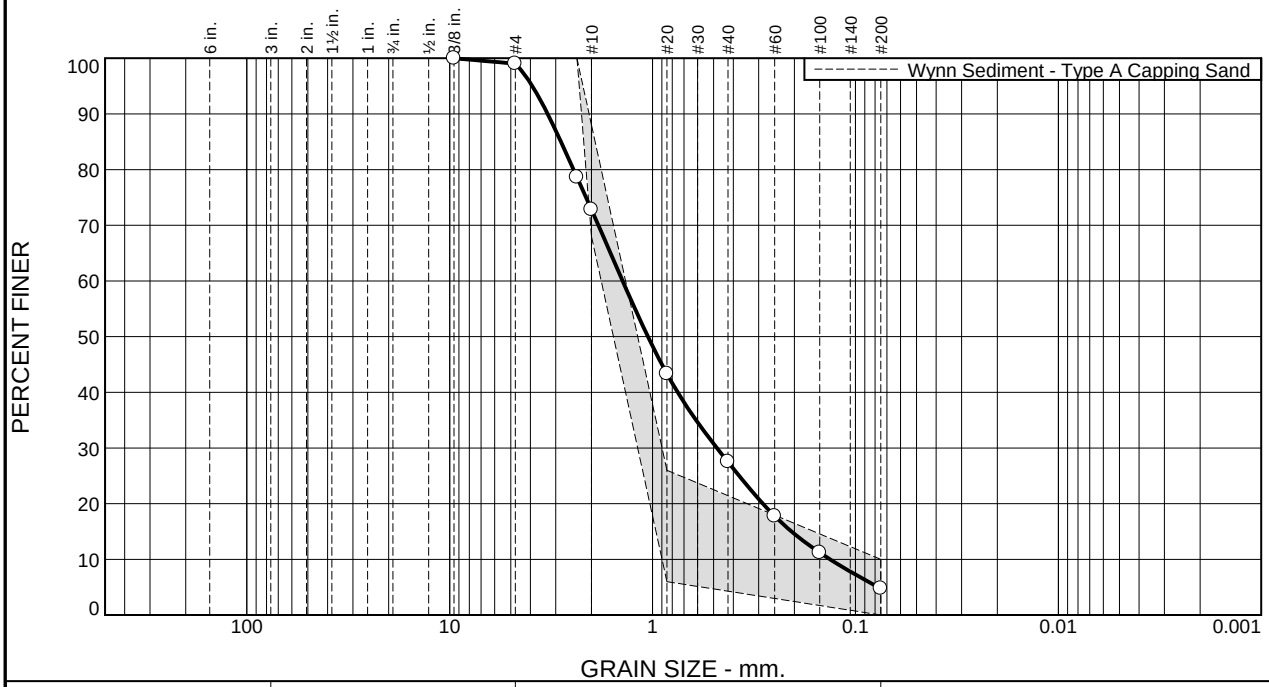
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 026

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-02

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	26.2	45.3	22.7	4.8	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.0		
#8	78.6	100.0	X
#10	72.8	68.0 - 88.0	
#20	43.3	6.0 - 26.0	X
#40	27.5		
#60	17.8		
#100	11.2		
#200	4.8	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.2887 D_{85}= 2.8287 D_{60}= 1.4046
D_{50}= 1.0540 D_{30}= 0.4816 D_{15}= 0.2065
D_{10}= 0.1334 C_u= 10.53 C_c= 1.24

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

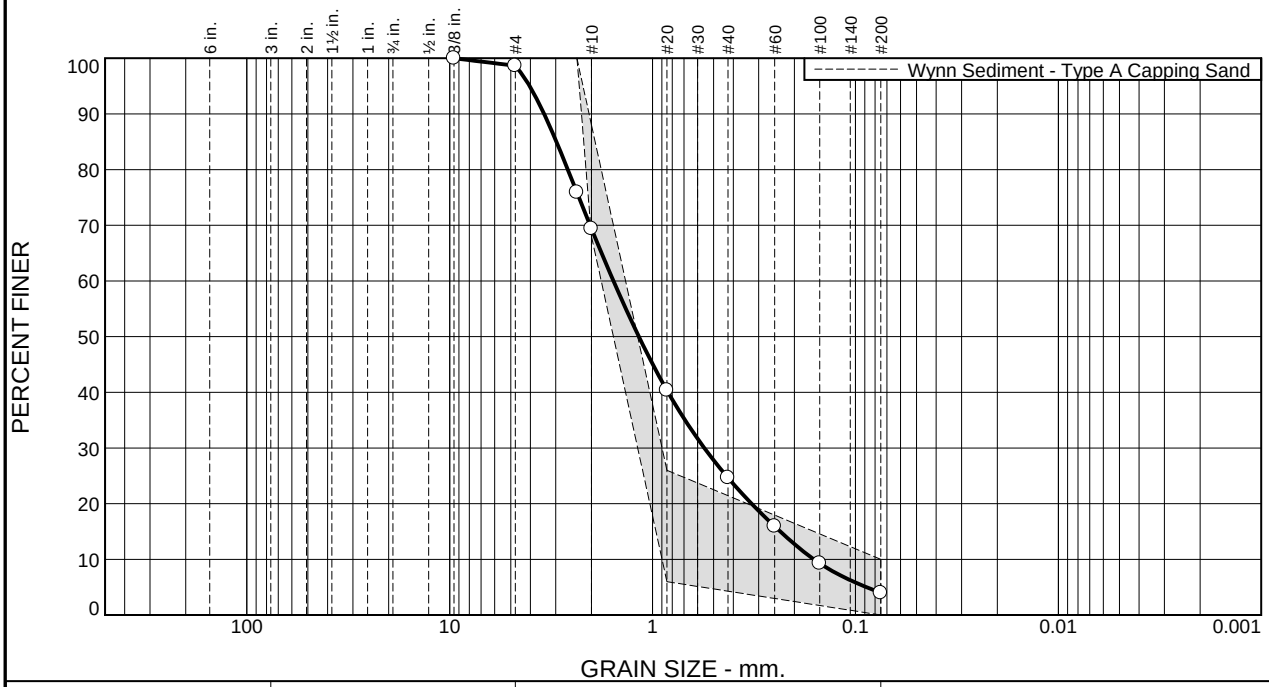
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 027

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-03

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	29.3	44.7	20.7	4.0	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.7		
#8	75.9	100.0	X
#10	69.4	68.0 - 88.0	
#20	40.4	6.0 - 26.0	X
#40	24.7		
#60	15.9		
#100	9.3		
#200	4.0	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4235 D_{85}= 2.9777 D_{60}= 1.5589
D_{50}= 1.1681 D_{30}= 0.5557 D_{15}= 0.2349
D_{10}= 0.1603 C_u= 9.72 C_c= 1.24

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

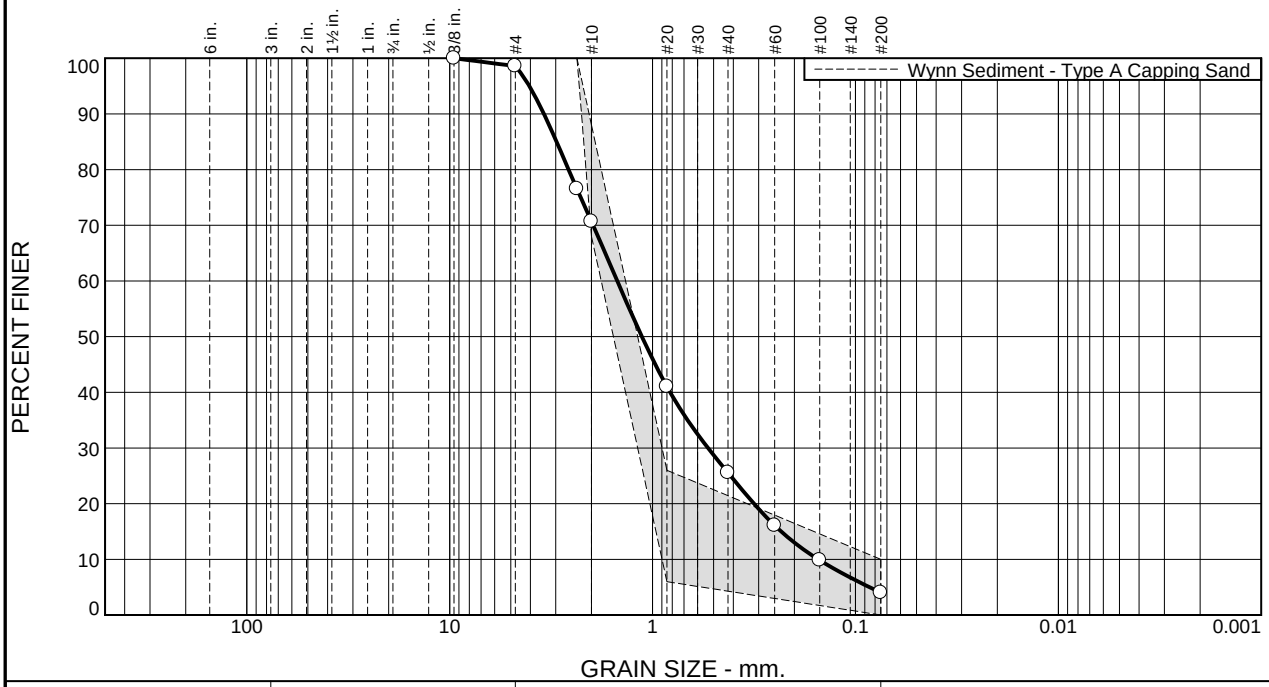
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 028

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-04

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.4	27.9	45.1	21.6	4.0	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.6		
#8	76.5	100.0	X
#10	70.7	68.0 - 88.0	
#20	41.0	6.0 - 26.0	X
#40	25.6		
#60	16.1		
#100	9.8		
#200	4.0	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4301 D_{85}= 2.9724 D_{60}= 1.4932
D_{50}= 1.1286 D_{30}= 0.5329 D_{15}= 0.2326
D_{10}= 0.1525 C_u= 9.79 C_c= 1.25

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

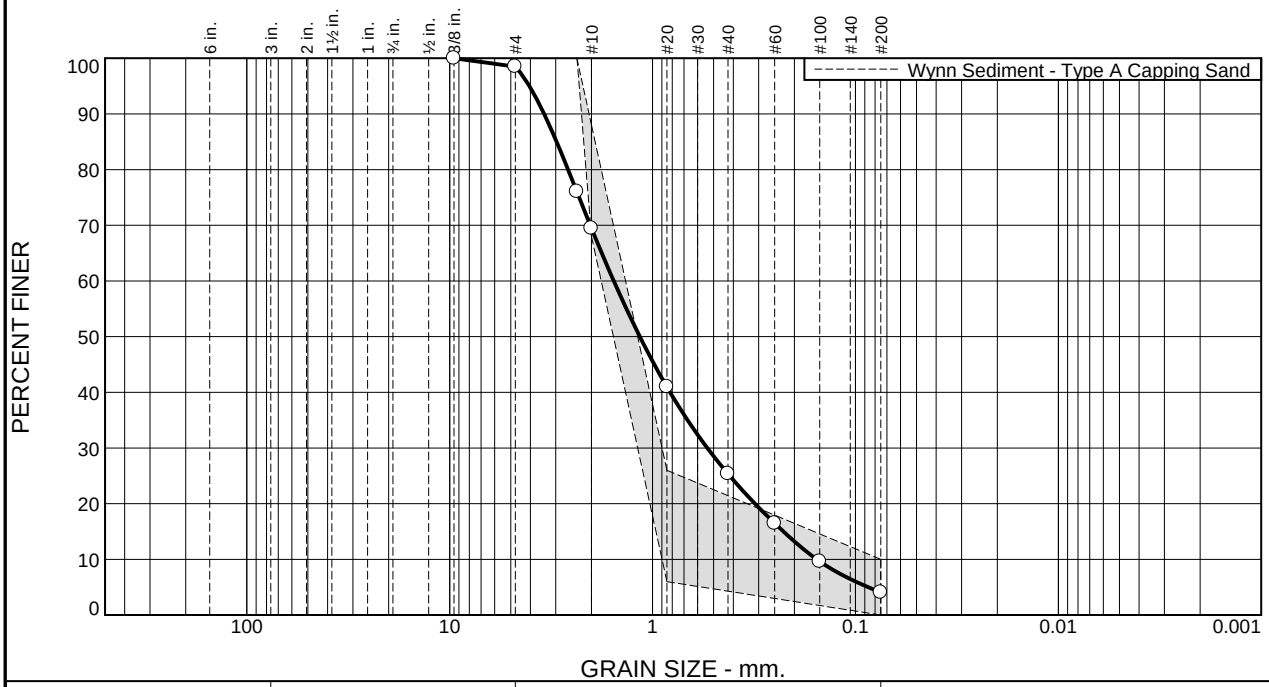
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 029

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-05

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	29.0	44.1	21.3	4.1	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.5		
#8	76.0	100.0	X
#10	69.5	68.0 - 88.0	
#20	41.0	6.0 - 26.0	X
#40	25.4		
#60	16.5		
#100	9.6		
#200	4.1	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4223 D_{85}= 2.9712 D_{60}= 1.5537
D_{50}= 1.1555 D_{30}= 0.5373 D_{15}= 0.2265
D_{10}= 0.1552 C_u= 10.01 C_c= 1.20

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

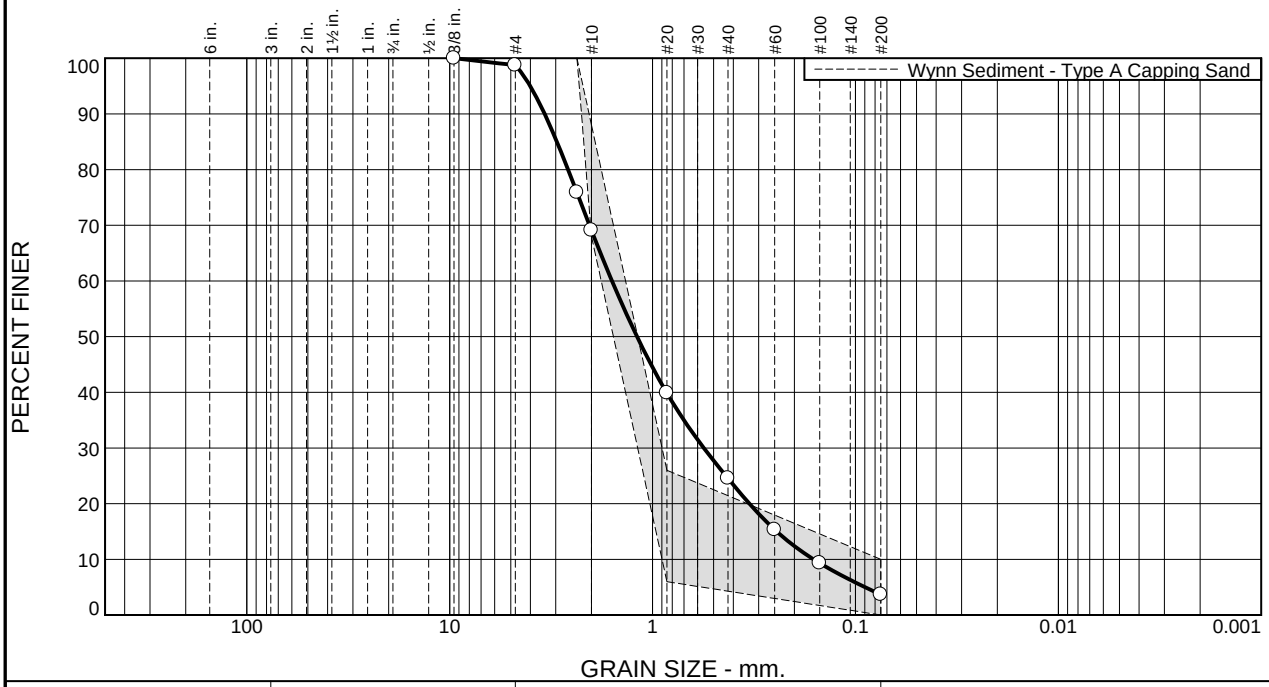
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 030

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-06

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	29.7	44.6	20.8	3.7	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.8		
#8	75.9	100.0	X
#10	69.1	68.0 - 88.0	
#20	39.9	6.0 - 26.0	X
#40	24.5		
#60	15.3		
#100	9.3		
#200	3.7	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.4019 D_{85}= 2.9621 D_{60}= 1.5849
D_{50}= 1.1927 D_{30}= 0.5590 D_{15}= 0.2446
D_{10}= 0.1608 C_u= 9.85 C_c= 1.23

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

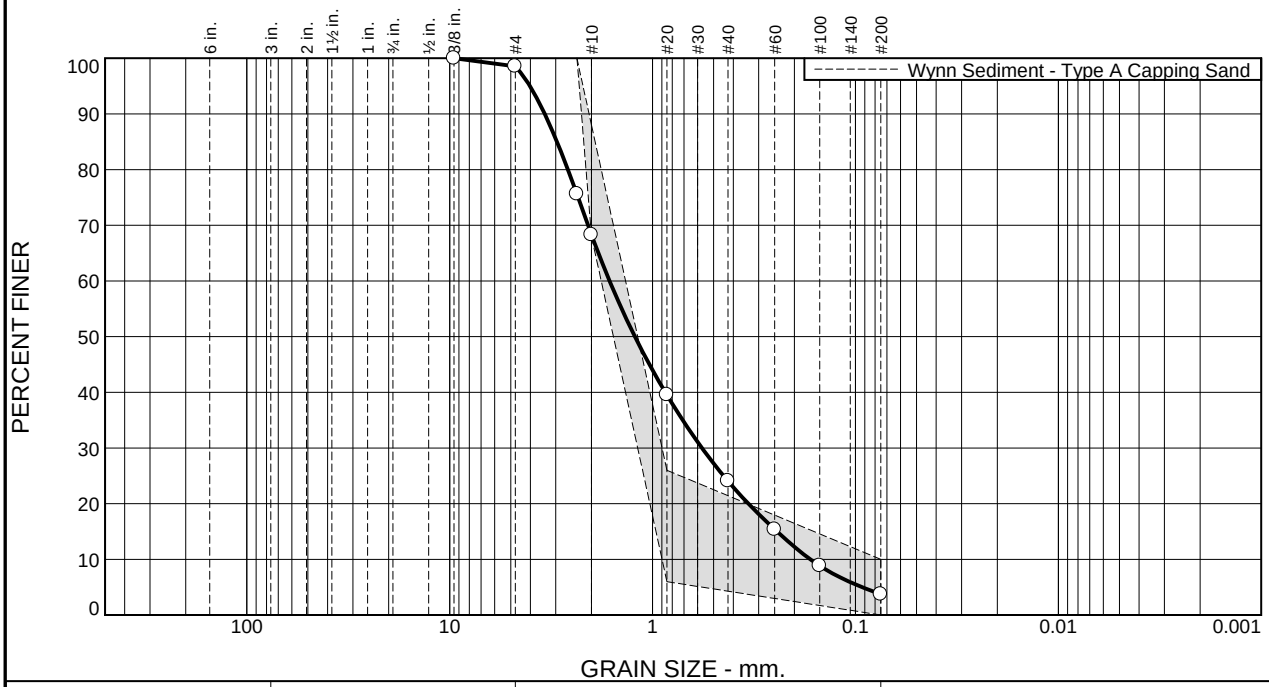
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 031

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-07

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	30.2	44.2	20.4	3.7	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.5		
#8	75.6	100.0	X
#10	68.3	68.0 - 88.0	
#20	39.5	6.0 - 26.0	X
#40	24.1		
#60	15.4		
#100	8.8		
#200	3.7	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.3989 D_{85}= 2.9591 D_{60}= 1.6294
D_{50}= 1.2218 D_{30}= 0.5708 D_{15}= 0.2436
D_{10}= 0.1668 C_u= 9.77 C_c= 1.20

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

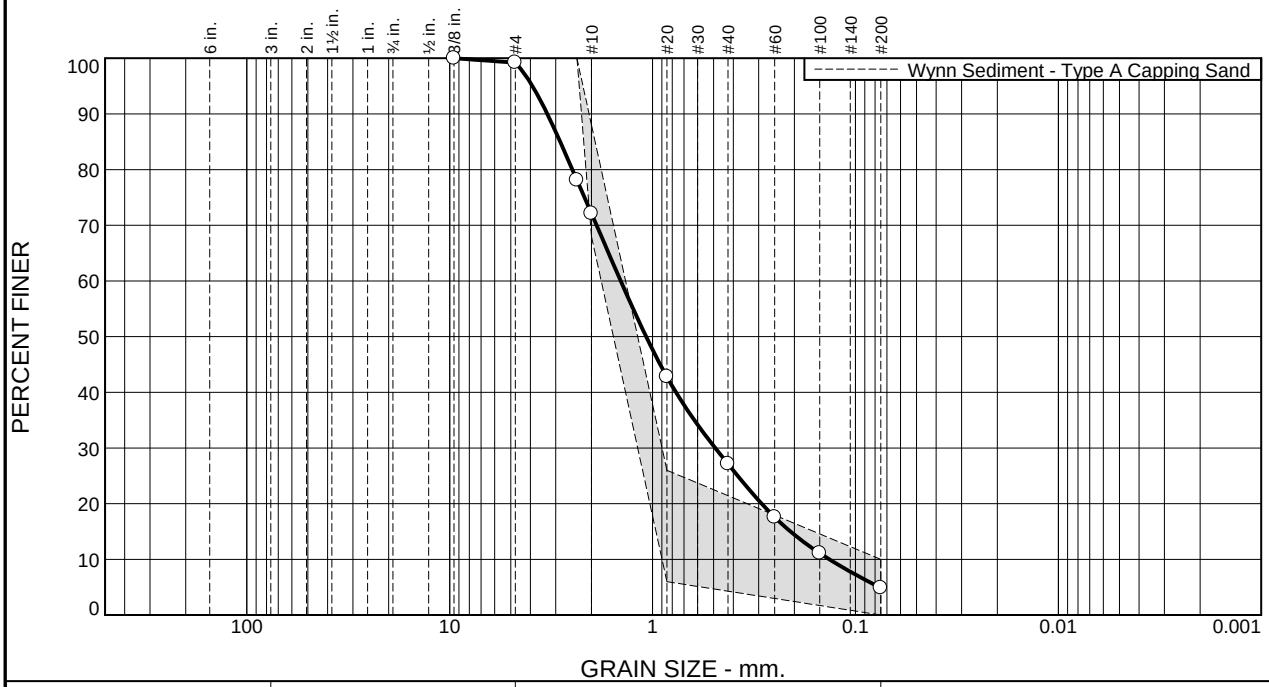
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 032

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-08

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	27.1	44.9	22.3	4.9	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	99.2		
#8	78.1	100.0	X
#10	72.1	68.0 - 88.0	
#20	42.8	6.0 - 26.0	X
#40	27.2		
#60	17.6		
#100	11.1		
#200	4.9	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.3009 D_{85}= 2.8526 D_{60}= 1.4356
D_{50}= 1.0756 D_{30}= 0.4909 D_{15}= 0.2092
D_{10}= 0.1346 C_u= 10.67 C_c= 1.25

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

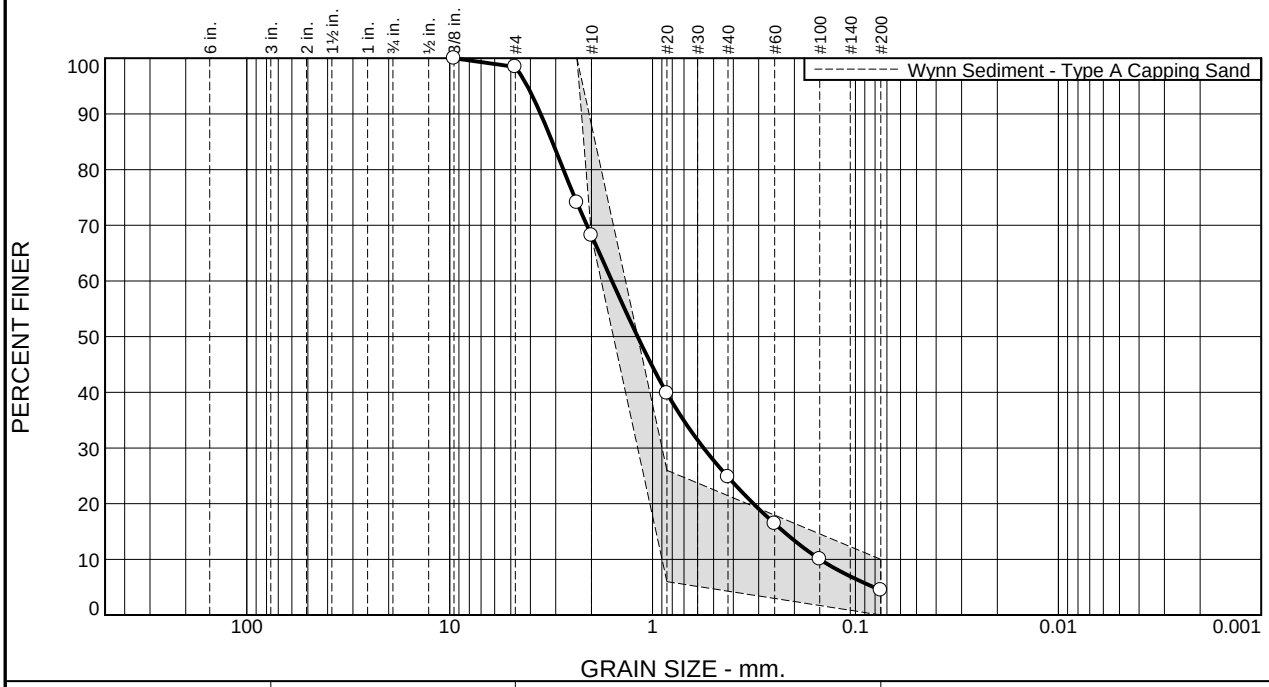
Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 033

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-09

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	30.2	43.4	20.3	4.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	98.4		
#8	74.1	100.0	X
#10	68.2	68.0 - 88.0	
#20	39.8	6.0 - 26.0	X
#40	24.8		
#60	16.4		
#100	10.0		
#200	4.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Brown well-graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 3.5593 D_{85}= 3.1199 D_{60}= 1.5848
D_{50}= 1.1846 D_{30}= 0.5605 D_{15}= 0.2261
D_{10}= 0.1496 C_u= 10.59 C_c= 1.32

Remarks

Date Received: 12.15.17 **Date Tested:** 12.19.17

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

Source of Sample: Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
Sample Number: Type A - 034

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1712348 **Figure** 1712348-10

SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
ESS Project No. 1712348
Project Manager Marc Levesque
Date Received 12/14/2017 (by)

Client Company Charter
Client Email
Site Location
Date Assigned 12/14/2017

Collected By
Date Required 12/19/2017

Sample Information				Lab No.	Identification Tests								Permeability		Compaction			Soil Strength			Consol.		Notes
Boring/ Test Pit No.	Sample or depth	Sample date	ESS Sample ID		Water Cont. %	LL & PL %	Org. %	Bulk	Sieve -200 %	Hyd -2μ %	G_s	Tube Density	Sand	Clay	Mod.	Std.	CBR	Un-con-fined	UU	CIU	Stand ard	E.O.P.	
					D2216	D4318	D2974		D422		D854		D2434	D5084	D1557	D698	D1883	D2166	D2850	D4767	D2435	D2435	#
Type A - Capping Sand - 025		12/14/17	1712348-01		X				X														**
Type A - Capping Sand - 026		12/14/17	1712348-02		X				X														**
Type A - Capping Sand - 027		12/14/17	1712348-03		X				X														**
Type A - Capping Sand - 028		12/14/17	1712348-04		X				X														**
Type A - Capping Sand - 029		12/14/17	1712348-05		X				X														**
Type A - Capping Sand - 030		12/14/17	1712348-06		X				X														**
Type A - Capping Sand - 031		12/14/17	1712348-07		X				X														**
Type A - Capping Sand - 032		12/14/17	1712348-08		X				X														**
Type A - Capping Sand - 033		12/14/17	1712348-09		X				X														**
Type A - Capping Sand - 034		12/14/17	1712348-10		X				X														**

Notes: ** = D2487 Material Classification

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712348
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? NA
   Temp: N/A Iced with: None
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? (Yes) / No 12/14/17
    ESS Sample IDs: 1-10
    Analysis: Dioxin, grain size, water %, classification
    TAT: 5 day
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: 12/14/17 Time: 1552 By:

Sample Receiving Notes:

Samples on hold 12/14/17

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	190914	Yes	NA	Yes	Other	NP	
01	191002	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	191021	Yes	NA	Yes	VOA Vial - Other	Other	
01	191022	Yes	NA	Yes	VOA Vial - Other	Other	
01	191041	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	191042	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	191052	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	190913	Yes	NA	Yes	Other	NP	
02	191001	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	191019	Yes	NA	Yes	VOA Vial - Other	Other	
02	191020	Yes	NA	Yes	VOA Vial - Other	Other	
02	191039	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	191040	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	191051	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	190912	Yes	NA	Yes	Other	NP	
03	191000	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	191017	Yes	NA	Yes	VOA Vial - Other	Other	
03	191018	Yes	NA	Yes	VOA Vial - Other	Other	
03	191037	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	191038	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	191050	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	190911	Yes	NA	Yes	Other	NP	
04	190999	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	191015	Yes	NA	Yes	VOA Vial - Other	Other	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712348

Date Received: 12/14/2017

04	191016	Yes	NA	Yes	VOA Vial - Other	Other
04	191035	Yes	NA	Yes	8 oz. Jar - Unpres	NP
04	191036	Yes	NA	Yes	8 oz. Jar - Unpres	NP
04	191049	Yes	NA	Yes	4 oz. Jar - Unpres	NP
05	190910	Yes	NA	Yes	Other	NP
05	190998	Yes	NA	Yes	VOA Vial - Methanol	MeOH
05	191013	Yes	NA	Yes	VOA Vial - Other	Other
05	191014	Yes	NA	Yes	VOA Vial - Other	Other
05	191033	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	191034	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	191048	Yes	NA	Yes	4 oz. Jar - Unpres	NP
06	190909	Yes	NA	Yes	Other	NP
06	190997	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	191011	Yes	NA	Yes	VOA Vial - Other	Other
06	191012	Yes	NA	Yes	VOA Vial - Other	Other
06	191031	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	191032	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	191047	Yes	NA	Yes	4 oz. Jar - Unpres	NP
07	190908	Yes	NA	Yes	Other	NP
07	190996	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	191009	Yes	NA	Yes	VOA Vial - Other	Other
07	191010	Yes	NA	Yes	VOA Vial - Other	Other
07	191029	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	191030	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	191046	Yes	NA	Yes	4 oz. Jar - Unpres	NP
08	190907	Yes	NA	Yes	Other	NP
08	190995	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	191007	Yes	NA	Yes	VOA Vial - Other	Other
08	191008	Yes	NA	Yes	VOA Vial - Other	Other
08	191027	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	191028	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	191045	Yes	NA	Yes	4 oz. Jar - Unpres	NP
09	190906	Yes	NA	Yes	Other	NP
09	190994	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	191005	Yes	NA	Yes	VOA Vial - Other	Other
09	191006	Yes	NA	Yes	VOA Vial - Other	Other
09	191025	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	191026	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	191044	Yes	NA	Yes	4 oz. Jar - Unpres	NP
10	190905	Yes	NA	Yes	Other	NP
10	190993	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	191003	Yes	NA	Yes	VOA Vial - Other	Other
10	191004	Yes	NA	Yes	VOA Vial - Other	Other
10	191023	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	191024	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	191043	Yes	NA	Yes	4 oz. Jar - Unpres	NP

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/14/17 1710

Reviewed By: _____ Date & Time: 12/14/17 1827

Delivered By: _____ 12/14/17 1827

Changes made 12/15/17 - ML

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab #	1712348
Turn Time	5-Day Rush
Regulatory State	
Reporting Limits	S-1
Electonic Deliverables	☑ Limit Checker ☐ Standard Excel ☐ Other (Please Specify →)

Is this project for any of the following?: ○ CT RCP ◉ MA MCP ○ RGP

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	12/14/17	9:30 AM	Grab	Soil	Type A - Capping Sand - 025	X	X	X	X	X	X	X	X	X	X	X
02	12/14/17	9:34 AM	Grab	Soil	Type A - Capping Sand - 026	X	X	X	X	X	X	X	X	X	X	X
03	12/14/17	9:38 AM	Grab	Soil	Type A - Capping Sand - 027	X	X	X	X	X	X	X	X	X	X	X
04	12/14/17	9:42 AM	Grab	Soil	Type A - Capping Sand - 028	X	X	X	X	X	X	X	X	X	X	X
05	12/14/17	9:46 AM	Grab	Soil	Type A - Capping Sand - 029	X	X	X	X	X	X	X	X	X	X	X
06	12/14/17	9:50 AM	Grab	Soil	Type A - Capping Sand - 030	X	X	X	X	X	X	X	X	X	X	X
07	12/14/17	9:54 AM	Grab	Soil	Type A - Capping Sand - 031	X	X	X	X	X	X	X	X	X	X	X
08	12/14/17	9:58 AM	Grab	Soil	Type A - Capping Sand - 032	X	X	X	X	X	X	X	X	X	X	X
09	12/14/17	10:02 AM	Grab	Soil	Type A - Capping Sand - 033	X	X	X	X	X	X	X	X	X	X	X
10	12/14/17	10:06 AM	Grab	Soil	Type A - Capping Sand - 034	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tin ice 3.3

Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Run gradation on Cap A first.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12/14	[signature] 12/14/17 12pm	[signature] 12/14/17 15:34	[signature] 12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton, SPS			

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab #	1712348
Turn Time	5-Day Rush
Regulatory State	
Reporting Limits	S-1
Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216
01	12/14/17	9:30 AM	Grab	Soil	Type A - Capping Sand - 025	X	X	X	X	X	X	X	X	X	X	X
02	12/14/17	9:34 AM	Grab	Soil	Type A - Capping Sand - 026	X	X	X	X	X	X	X	X	X	X	X
03	12/14/17	9:38 AM	Grab	Soil	Type A - Capping Sand - 027	X	X	X	X	X	X	X	X	X	X	X
04	12/14/17	9:42 AM	Grab	Soil	Type A - Capping Sand - 028	X	X	X	X	X	X	X	X	X	X	X
05	12/14/17	9:46 AM	Grab	Soil	Type A - Capping Sand - 029	X	X	X	X	X	X	X	X	X	X	X
06	12/14/17	9:50 AM	Grab	Soil	Type A - Capping Sand - 030	X	X	X	X	X	X	X	X	X	X	X
07	12/14/17	9:54 AM	Grab	Soil	Type A - Capping Sand - 031	X	X	X	X	X	X	X	X	X	X	X
08	12/14/17	9:58 AM	Grab	Soil	Type A - Capping Sand - 032	X	X	X	X	X	X	X	X	X	X	X
09	12/14/17	10:02 AM	Grab	Soil	Type A - Capping Sand - 033	X	X	X	X	X	X	X	X	X	X	X
10	12/14/17	10:06 AM	Grab	Soil	Type A - Capping Sand - 034	X	X	X	X	X	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present:

Seals Intact: Tim ice 3.3

Cooler Temperature: °C

Sampled by : Aggregate Industries QC

Comments: **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Run gradation on Cap A first.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12/14	[signature] 12/14/17 12pm	[signature] 12/14/17 1534	[signature] 12/14/17 1543
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Devon Wilton, SPS			

CERTIFICATE OF ANALYSIS

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Wynn Boston Harbor Backfill (454)
ESS Laboratory Work Order Number: 1801266

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:49 pm, Jan 19, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses
CTS - Cranston, RI — Grain Size Analysis, Soil Classification, Water Content

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

SAMPLE RECEIPT

The following samples were received on January 16, 2018 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

The client did not deliver the samples in a cooler.

Lab Number	Sample Name	Matrix	Analysis
1801266-01	Type A Blend - Capping Sand - 001	Soil	§
1801266-02	Type A Blend - Capping Sand - 002	Soil	§
1801266-03	Type A Blend - Capping Sand - 003	Soil	§
1801266-04	Type A Blend - Capping Sand - 004	Soil	§

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

Classical Chemistry

Client Sample ID: Type A Blend - Capping Sand - 001
Date Sampled: 01/16/18 12:30

ESS Laboratory Sample ID: 1801266-01
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A Blend - Capping Sand - 002
Date Sampled: 01/16/18 12:35

ESS Laboratory Sample ID: 1801266-02
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A Blend - Capping Sand - 003
Date Sampled: 01/16/18 12:40

ESS Laboratory Sample ID: 1801266-03
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

Client Sample ID: Type A Blend - Capping Sand - 004
Date Sampled: 01/16/18 12:45

ESS Laboratory Sample ID: 1801266-04
Sample Matrix: Soil

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Grain Size	**See Attached**						
Soil Classification	**See Attached**						
Water by Distillation	**See Attached**						

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1801266

Notes and Definitions

Z-08	See Attached
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

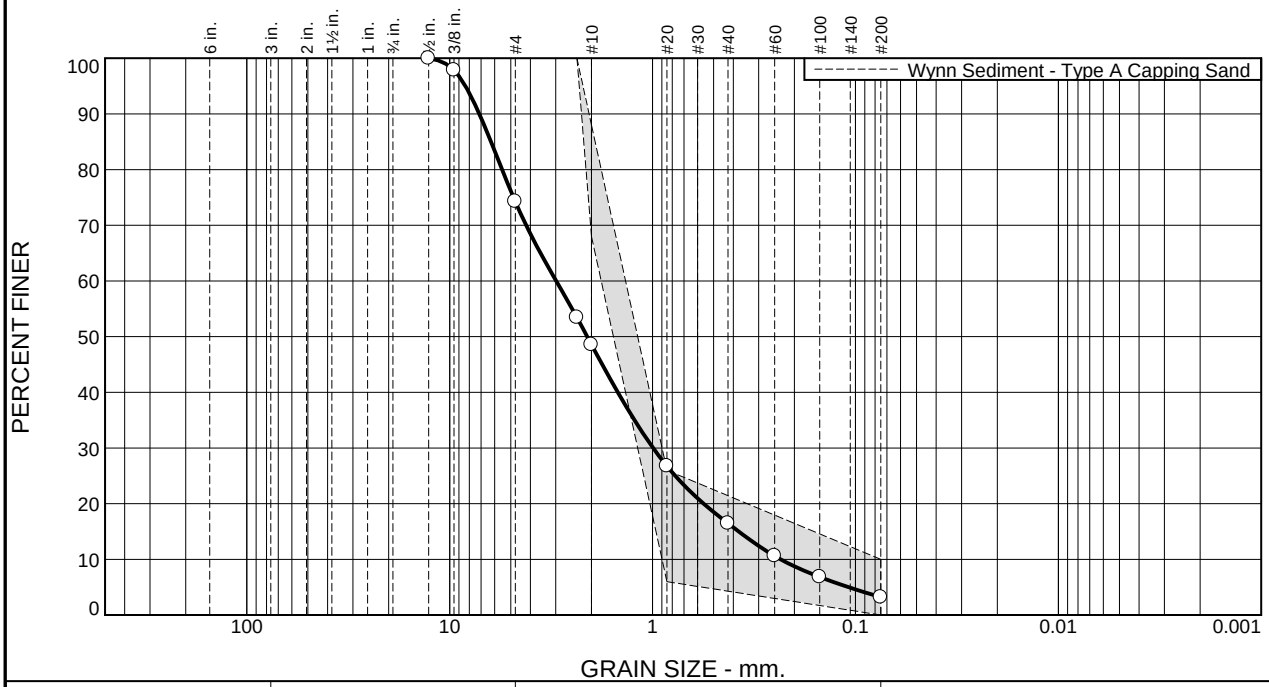
THIELSCH ENGINEERING	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 http://www.thielsch.com	Client Information: Charter Contracting Boston, MA PM: Marc Levesque Assigned By: Marc Levesque	Laboratory Information Project Name: **Wynn Boston Harbor Sediment Remediation** **Boston, MA** ESS Project Number: 1801266 Report Date: 01.19.18

LABORATORY TESTING DATA SHEET

Material	ESS .Sample No.	Depth (ft)	CTS Laboratory No.	Identification Tests							Density		Strength Tests				
				Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Setup as % of Proctor	CBR Dry unit wt. pcf	CBR Water Content %	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
Type A Blend 001	1801266-01	Stock	18-S-069	2.3			25.8	71.0	3.2								Grey well-graded sand with gravel (SW)
Type A Blend 002	1801266-02	Stock	18-S-070	3.2			30.1	67.4	2.5								Grey well-graded sand with gravel (SW)
Type A Blend 003	1801266-03	Stock	18-S-071	3.0			26.0	70.8	3.2								Grey well-graded sand with gravel (SW)
Type A Blend 004	1801266-04	Stock	18-S-072	1.5			37.8	60.7	1.5								Grey poorly-graded sand with gravel (SP)

Reviewed By _____ Date Reviewed: 01.19.18

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	25.8	25.6	32.1	13.3	3.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	97.9		
#4	74.2		
#8	53.4	100.0	X
#10	48.6	68.0 - 88.0	X
#20	26.8	6.0 - 26.0	X
#40	16.5		
#60	10.6		
#100	6.8		
#200	3.2	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Grey well-graded sand with gravel

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-a

Coefficients

D_{90}= 7.1440 D_{85}= 6.2568 D_{60}= 2.9853
D_{50}= 2.0994 D_{30}= 0.9938 D_{15}= 0.3763
D_{10}= 0.2339 C_u= 12.76 C_c= 1.41

Remarks

Date Received: 01.17.18 **Date Tested:** 01.19.18

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

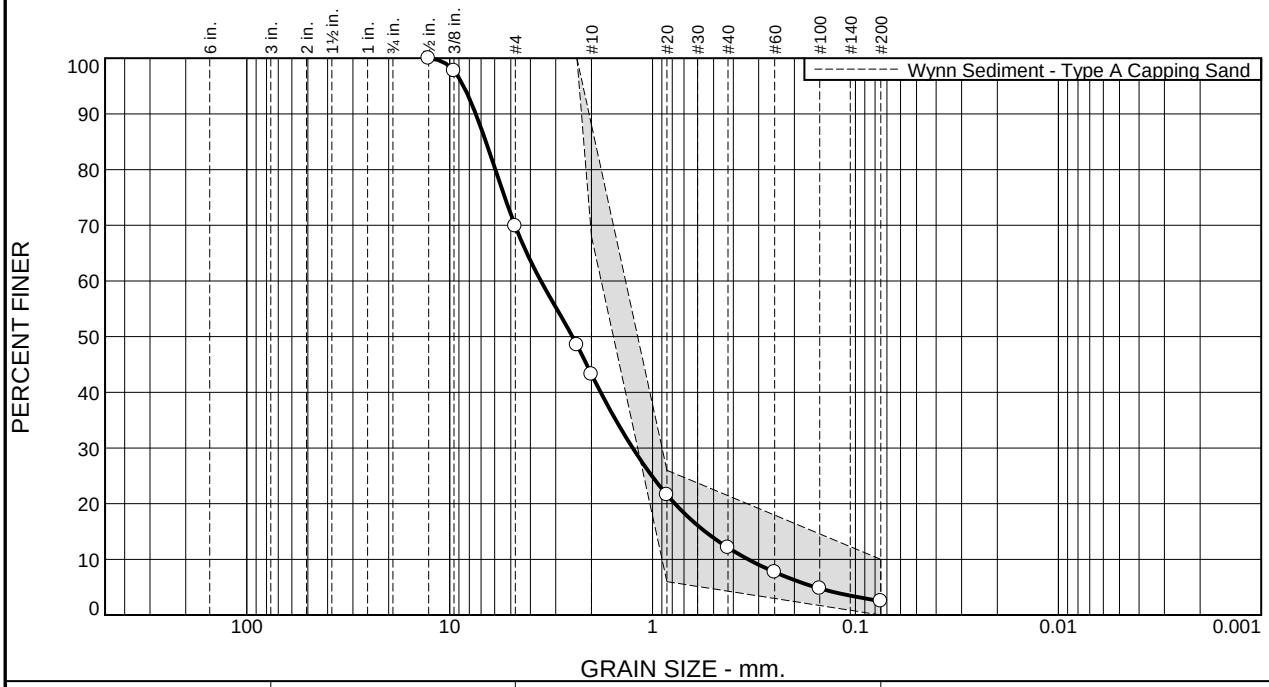
Source of Sample: Type A Capping Sand - Blend **Depth:** Stockpile **Date Sampled:** 01.16.18
Sample Number: Type A Blend - 001

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1801266 **Figure** 1801266-01

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	30.1	26.7	31.1	9.6	2.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	97.7		
#4	69.9		
#8	48.5	100.0	X
#10	43.2	68.0 - 88.0	X
#20	21.6	6.0 - 26.0	
#40	12.1		
#60	7.7		
#100	4.8		
#200	2.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Grey well-graded sand with gravel

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-a

Coefficients

D_{90}= 7.4378 D_{85}= 6.6298 D_{60}= 3.5522
D_{50}= 2.4815 D_{30}= 1.2534 D_{15}= 0.5507
D_{10}= 0.3378 C_u= 10.51 C_c= 1.31

Remarks

Date Received: 01.17.18 **Date Tested:** 01.19.18

Tested By: JF

Checked By: Matthew Colman, P.E.

Title: Laboratory Manager

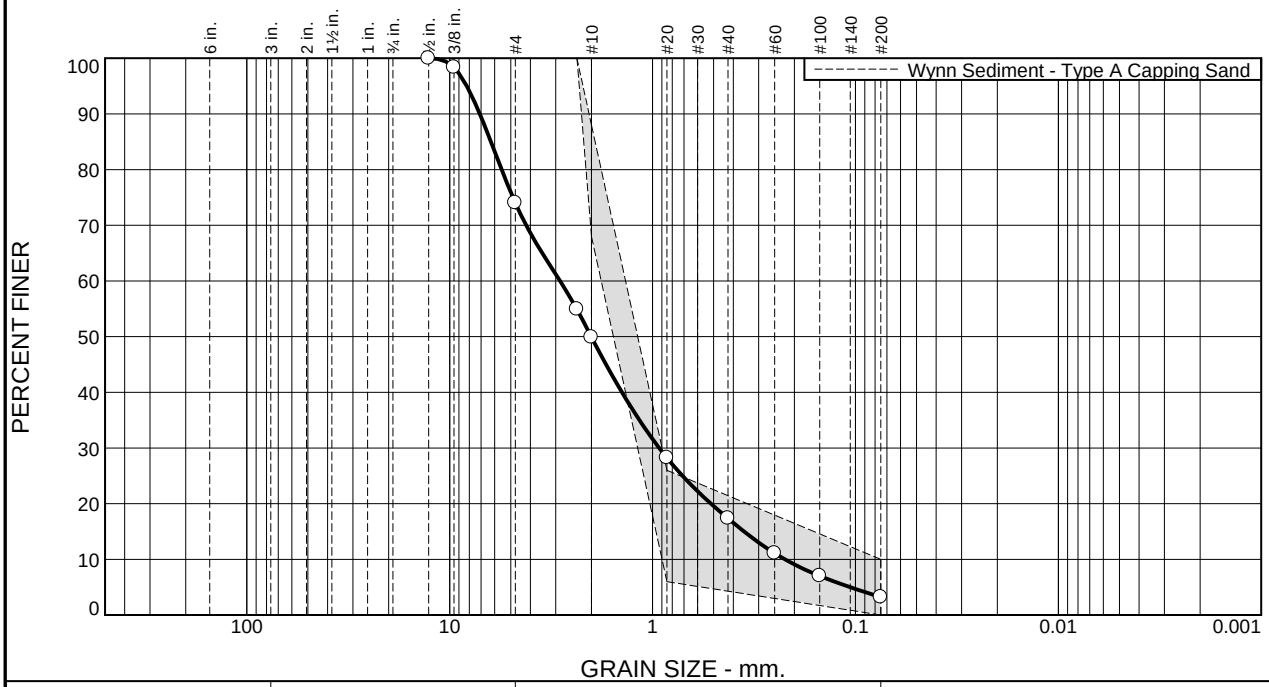
Source of Sample: Type A Capping Sand - Blend **Depth:** Stockpile **Date Sampled:** 01.16.18
Sample Number: Type A Blend - 002

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1801266 **Figure** 1801266-02

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	26.0	24.1	32.5	14.2	3.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	98.3		
#4	74.0		
#8	54.9	100.0	X
#10	49.9	68.0 - 88.0	X
#20	28.2	6.0 - 26.0	X
#40	17.4		
#60	11.1		
#100	7.0		
#200	3.2	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Grey well-graded sand with gravel

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-a

Coefficients

D_{90}= 7.1053 D_{85}= 6.2618 D_{60}= 2.8581
D_{50}= 2.0071 D_{30}= 0.9275 D_{15}= 0.3537
D_{10}= 0.2228 C_u= 12.83 C_c= 1.35

Remarks

Date Received: 01.17.18 **Date Tested:** 01.19.18

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

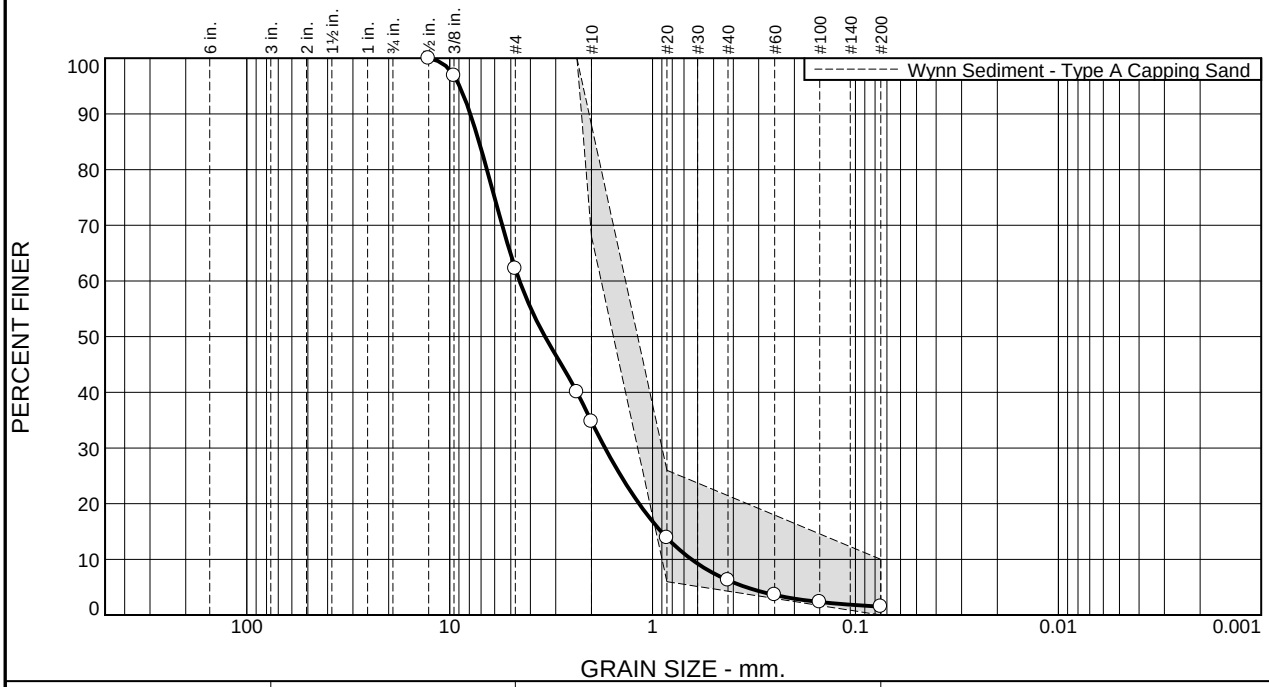
Source of Sample: Type A Capping Sand - Blend **Depth:** Stockpile **Date Sampled:** 01.16.18
Sample Number: Type A Blend - 003

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1801266 **Figure** 1801266-03

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	37.8	27.5	28.4	4.8	1.5	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	96.9		
#4	62.2		
#8	40.0	100.0	X
#10	34.7	68.0 - 88.0	X
#20	13.9	6.0 - 26.0	
#40	6.3		
#60	3.6		
#100	2.3		
#200	1.5	0.0 - 10.0	

* Wynn Sediment - Type A Capping Sand

Material Description

Grey poorly graded sand with gravel

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW **AASHTO (M 145)=** A-1-a

Coefficients

D_{90}= 7.9124 D_{85}= 7.1696 D_{60}= 4.5225
D_{50}= 3.3877 D_{30}= 1.7147 D_{15}= 0.9083
D_{10}= 0.6432 C_u= 7.03 C_c= 1.01

Remarks

Date Received: 01.17.18 **Date Tested:** 01.19.18

Tested By: JF

Checked By: Matthew Colman P.E.

Title: Laboratory Manager

Source of Sample: Type A Capping Sand - Blend **Depth:** Stockpile **Date Sampled:** 01.16.18
Sample Number: Type A Blend - 004

Thielsch Engineering Inc.

Cranston, RI

Client: ESS / Charter Contracting
Project: Wynn Boston Harbor Sediment Remediation
Boston, MA
Project No: 1801266 **Figure** 1801266-04

SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
ESS Project No. **1801266**
Project Manager Marc Levesque
Date Received 1/16/2018 (by)

Client Company Charter
Client Email
Site Location
Date Assigned 1/16/2018

Collected By
Date Required 1/18/2018

Sample Information					Identification Tests								Permeability		Compaction			Soil Strength			Consol.		Notes
Boring/ Test Pit No.	Sample or depth	Sample date	ESS Sample ID	Lab No.	Water Cont. %	LL & PL %	Org. %	Bulk	Sieve -200 %	Hyd -2μ %	G_s	Tube Den-sity	Sand	Clay	Mod.	Std.	CBR	Un-con-fined	UU	CIU	Stand ard	E.O.P.	
					D2216	D4318	D2974		D422		D854		D2434	D5084	D1557	D698	D1883	D2166	D2850	D4767	D2435	D2435	#
Type A Blend - Capping Sand - 001		1/16/18	1801266-01		X				X														**
Type A Blend - Capping Sand - 002		1/16/18	1801266-02		X				X														**
Type A Blend - Capping Sand - 003		1/16/18	1801266-03		X				X														**
Type A Blend - Capping Sand - 004		1/16/18	1801266-04		X				X														**

Notes: ** = D2487 Material Classification

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY 2 day

Turn Time	5-Day Rush per ML
Regulatory State	
Is this project for any of the following?:	○CT RCP ◉MA MCP ○RGP
ESS Lab #	1801266
Reporting Limits	S-1
Electonic Deliverables	☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
Charter / SPS New England	454	Wynn Backfill

Contact Person	Address
Katherine Mason	500 Harrison Ave, Suite 4R

City	State	Zip Code	PO #
Boston	MA	02118	454.0029

Telephone Number	FAX Number	Email Address
		kmason@charter.us

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC 8260	SVOC 8270	PCB 8082	Pesticides 8081	Herbicides 8151	TOC 9060	MCP 14 6000/7000	Dioxins 8290	Grain Size D422	Material Classification D2487	Moisture Content D2216				
01	01/16/18	12:30 PM	Grab	Soil	Type A Blend - Capping Sand - 001	X	X	X	X	X	X	X	X	X	X	X				
02	01/16/18	12:35 PM	Grab	Soil	Type A Blend - Capping Sand - 002	X	X	X	X	X	X	X	X	X	X	X		DJ 1/17/18		
03	01/16/18	12:40 PM	Grab	Soil	Type A Blend - Capping Sand - 003	X	X	X	X	X	X	X	X	X	X	X				
04	01/16/18	12:45 PM	Grab	Soil	Type A Blend - Capping Sand - 004	X	X	X	X	X	X	X	X	X	X	X				
					TB Vials															

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
Number of Containers per Sample:

Laboratory Use Only
Cooler Present: ✓ no
Seals Intact: —
Cooler Temperature: 0.4 °C

Sampled by: Aggregate Industries QC
Comments: Please specify "Other" preservative and containers types in this space
~~Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.~~ per ML

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
01/16/18 1:55 PM	1-16-18 1355	1-16-18 1715	1/16/18 1725
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

Devon Wilson SPS

LABORATORY AGGREGATE TESTING

AGGREGATE INDUSTRIES

SOILS

SIEVE ANALYSIS

(ASTM C117, C136) (AASHTO T11, T27)

SOURCE: Littleton

DATE SAMPLED: 12-Jan-17

MATERIAL DESCRIPTION: CAP TYPE A 75% WSS 25% 3/8" Blend

SAMPLED BY: OM

DATE LOGGED: 12-Jan-17

TESTED BY: OM

DATE TESTED: 12-Jan-17

C 117 T11

ORIGINAL DRY WEIGHT	WEIGHT AFTER WASHING	AMOUNT LOST	% LOST
3856.2	3856.2	0.0	0.0

SIEVE SIZE	WEIGHT RETAINED	% RETAINED	%PASSING	SPECIFICATION min	max
3"	0.0	0.0	100		
2"	0.0	0.0	100		
1.5"	0.0	0.0	100		
1"	0.0	0.0	100		
3/4"	0.0	0.0	100		
1/2"	0.0	0.0	100		
3/8"	61.8	1.6	98		
#4	926.6	24.0	76		
#8	1466.9	38.0	62		
#10	1659.1	43.0	57		
#16	2208.3	57.3	43		
#20	2531.2	65.6	34		
#30	2811.1	72.9	27		
#40	3062.6	79.4	21		
#50	3263.2	84.6	15		
#100	3577.2	92.8	7		
#200	3759.6	97.5	2.5		

REMARKS: