CONSTRUCTION COMPLETION REPORT

Shelton C Street Landfill
Shelton, Washington

Prepared for: City of Shelton

Project No. 150074-C • October 25, 2023 FINAL

Aspect
A Geosyntec Company

earth + water

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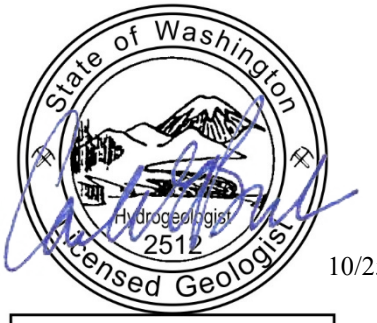
Aspect Consulting, LLC

10/25/2023



10/25/2023

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Contents

List of Tables

List of Figures

List of Appendices

Acronyms

Agreed Order	Agreed Order No. DE 19541
Aspect	Aspect Consulting, LLC
CAP	Cleanup Action Plan
CCR	Construction Completion Report
City	City of Shelton
cPAHs	carcinogenic polycyclic aromatic hydrocarbons
COCs	contaminants of concern
CY	cubic yards
Ecology	Washington State Department of Ecology
EDR	Engineering Design Report
mg/kg	milligrams/kilogram
Miles	Miles Sand & Gravel Co.
MTCA	Model Toxics Control Act
RCW	Revised Code of Washington
RI/FS	Remedial Investigation/Feasibility Study
WAC	Washington Administrative Code
WDNR	Washington Department of Natural Resources
WSDOT	Washington State Department of Transportation
WWTP	wastewater treatment plant

1 Introduction

Aspect Consulting, LLC (Aspect) prepared this Construction Completion Report (CCR) to document the cleanup construction activities performed at the Shelton C Street Landfill, a former municipal solid waste landfill, located in Shelton, Washington (herein referred to as the Site; Figure 1). The Site is located on a 16.7-acre parcel (Property; Figure 1) owned by the City of Shelton. The Property is at the west end of West C Street, just west of the overpass across U.S. Highway 101 in Mason, County, Washington. The City of Shelton (City) acquired the Property in 1928 and used a portion of it as a municipal solid waste landfill through the early 1980s for disposal of solid waste generated within the City limits and the surrounding areas.

The CCR has been prepared to meet the requirements of Agreed Order No. DE 19541 (Agreed Order) between the Washington State Department of Ecology (Ecology) and the City, executed on December 20, 2021. Ecology has determined that the cleanup action documented in this report complies with the Model Toxics Control Act (MTCA), Chapter 70.105D Revised Code of Washington (RCW), and the MTCA Cleanup Regulation, Chapter 173-340 of the Washington Administrative Code (WAC). This determination is based on the Remedial Investigation and Feasibility Study (RI/FS) Report (Aspect, 2021) and Cleanup Action Plan (CAP; Ecology, 2021), and other relevant documents in the administrative record.

The activities described in the CCR were conducted in accordance with the Engineering Design Report (EDR; Aspect, 2022a) and its addendums (Aspect, 2022b and 2023), which collectively provide the plans, specifications, and monitoring requirements for the engineering concepts of the cleanup action.

1.1 Report Organization

The following sections of this report are organized as follows:

- **Section 2—Background** describes the use history of the Property, the results of the RI/FS, and the cleanup action goals established in the CAP.
- **Section 3—Cleanup Construction Activities** describes the scope, methods, and implementation of the cleanup, including the low permeability cap construction, installation of physical barriers, and post-construction monitoring.
- **Section 4—Summary and Conclusions** briefly summarizes the cleanup construction results relative to the CAP goals.
- **Section 5—References** lists the documents cited in this report.

2 Background

2.1 Site Use History

The Property was purchased by the City in May 1928, including both the parcel and a perpetual easement for access; landfilling activities started the same year. In July 1931, the City sold the property to Rainier Pulp and Paper Company but retained the right to continue to use the land as a garbage dump. Rayonier, Incorporated, successor of Rainier Pulp and Paper Company, sold the property back to the City in July 1949.

The landfill received municipal solid waste between approximately 1928 and the mid-1980s. Early on, waste consolidation practices included open burning and on-Property incineration, common for the era (Aspect, 2021). Between 1931 and 1974, the landfill received by-products, research waste, and demolition debris from nearby pulp mills. Sludge from the City's wastewater treatment plant (WWTP) was brought to the landfill between 1973 and the mid-1980s. From 1976 to 1981, fly ash from the wood-burning power plant at the Simpson Timber Company mill was mixed with the WWTP sludge and put in the landfill. The WWTP sludge was disposed of in the northwestern part of the landfill and is estimated to be up to 5 feet thick. The cover soil and WWTP sludge overlie municipal solid waste that is approximately 20 to 25 feet thick.

The Property has been generally unused since the mid-1980s, and public access to the Property and surrounding properties is restricted for safety reasons. There is no available information that documents landfill closure activities, and it is not known whether any were completed, but the results of the RI indicate that some of the landfill waste was covered with imported soil.

In 2016, the City entered into Agreed Order No. DE 12929 with Ecology to perform an RI and FS and to submit a draft CAP for the Site. The RI field work was conducted between 2017 and 2020. The final RI/FS report and draft CAP were provided to Ecology in 2021, fulfilling the requirements of Agreed Order No. DE 12929.

In 2021, the City entered into Agreed Order No. DE 19541 with Ecology to implement the cleanup action described in the draft CAP following its finalization in February 2021. As of the date of this report, the completed requirements of the 2021 Agreed Order include preparation of the EDR with Compliance Monitoring Plan, construction plans, and specifications between 2021 and July 2022; conducting the cleanup construction between January and June 2023; and preparation of this Construction Completion Report.

2.2 Results of Remedial Investigation and Feasibility Study

Results of the RI (Aspect, 2021) indicate that the source of contaminants at the Site is the landfill waste, including the WWTP sludge. The contaminants of concern (COCs) for the cleanup action consist of carcinogenic polycyclic aromatic hydrocarbons (cPAHs), dioxin/furans, and metals in surface soil, and total and dissolved iron and manganese in groundwater. Dioxin/furans, cPAHs, and metals are at the highest concentrations in surface soil at the northwest portion of the landfill, where WWTP sludge was disposed of on the ground surface. Based on current and potential future use scenarios, the risk at the Site is to human receptors and terrestrial ecological receptors (plants and animals) who

have the potential for direct contact with landfill waste and COCs in surface and shallow subsurface soil.

To address contamination at the Site, four remedial alternatives were developed and evaluated in the FS (Aspect, 2021). The alternatives combined a range of potentially applicable technologies, consisting of landfill capping, source removal, institutional controls, and long-term monitoring. Each of the four alternatives were evaluated against the MTCA threshold criteria and other requirements, including disproportionate cost analysis procedures (WAC 173-340-360). The results of the analysis identified the following as the preferred alternative:

- **Alternative 1**, consisting of four components: install a low permeability soil cap meeting the landfill closure specifications in WAC 173-304-460(e); implement institutional controls in the form of deed restriction; install physical barriers in the form of fencing and restricted-access signage; and conduct long-term inspection, monitoring, and maintenance (I, M, and M), including annual topographic surveys for the first 5 years, periodic inspection of Site conditions, maintenance of the remedy as needed, semiannual groundwater monitoring for iron and manganese concentrations, and periodic reporting to Ecology including 5-year reviews.

2.3 Cleanup Action Elements and Goals

The cleanup activities were designed to improve protection of human health and the environment at the Site by implementing the CAP (Ecology, 2021). The elements of the cleanup action and their specific role in achieving the goal of protecting human health and the environment are as follows:

- **Low Permeability Soil Cap.** The soil cap, installed over the full extent of the landfill (approximately 4 acres), prevents contact with landfill waste and contaminated soil by human and terrestrial ecological receptors and meets the landfill closure specifications in WAC 173-304-460(e). The soil cap consists of a geotextile isolation barrier; a minimum 2-foot-thick layer of clean, imported low permeability cover materials; and a 6-inch-thick vegetative layer of topsoil seeded with grasses or other shallow-rooted vegetation. Installation of the soil cap is discussed in Section 3.3.
- **Institutional Controls.** Institutional controls will include an environmental covenant, in the form of a deed restriction, to prevent future, unrestricted development or any other activities that could create exposure pathways for direct contact with the contaminated soil or landfill waste. The institutional controls are required *in perpetuity.*
- **Signage and Physical Barriers.** Signage will be installed along the main access road that connects to the terminus of West C Street, warning of the presence of landfill waste and potential risk to human health, along with a gate or other physical restriction on the access road. A fence with signage will be installed surrounding the landfill area to minimize accessibility from areas other than the access road. Installation of physical barriers is discussed in Section 3.4.

- **Monitoring.** Long-term monitoring will be conducted to ensure the remedy remains protective over time. The I, M, and M program will include the following:
    - Periodic inspection of Site conditions to ensure integrity of the soil cap, signage, and physical barriers
    - Maintenance of the remedy (e.g., removal of large or deep-rooted vegetation from the cap area[1] and filling of eroded areas), performed on an as-needed basis
    - Semiannual groundwater monitoring at the four existing monitoring wells for iron and manganese concentrations to demonstrate groundwater protection
    - Annual topographic surveys for at least the first 5 years following construction, to compare with as-built conditions and demonstrate soil cap stability
    - Periodic reporting of I, M, and M activities to Ecology, including 5-year reviews
- The initial topographic survey and initial semiannual groundwater monitoring event are described in Sections 4.1 and 4.2 respectively.

3 Cleanup Construction Activities

This section describes the cleanup construction activities related to the engineering concepts for the cleanup action, including landfill waste relocation and consolidation, low permeability soil cap construction, and installation of physical barriers. Photographs of cleanup construction activities are included as Appendix A.

3.1 Cleanup Construction Overview

Through a competitive bid process, the City awarded the contract to Brumfield Construction (Brumfield; Contractor) of Aberdeen, Washington. Brumfield self-performed the landfill waste consolidation and soil cap construction components of the work.

Brumfield mobilized to the Site and completed worker orientation, surveying, clearing and grubbing activities, and construction of access roads in early January 2023.Waste excavation activities began on January 9, 2023, with excavation of landfill waste extending south of the Property boundary onto the south-adjoining property owned by Miles Sand & Gravel Co. (Miles) for consolidation into the landfill on the Property. During waste excavation activities on the south-adjoining property, it became apparent that the horizontal and vertical extents of the waste were greater than anticipated and shown in the plans. On approximately January 17, 2023, cleanup construction activities

[1] Trees would not be allowed to grow in the capped area, since roots of large trees could extend into the landfill waste and bring it to the surface if a tree is blown over (for example).

were paused for 12 weeks to allow for modification of the excavation plans and specifications for an aerially larger and vertically deeper excavation on the south-adjoining property (see Section 3.2). Cleanup construction resumed on April 12, 2023. The remaining landfill waste consolidation activities were completed by May 30, 2023 (Section 3.2). Construction of the low permeability cap and installation of the physical barriers on the Property were primarily completed between April 25, 2023, and June 14, 2023, respectively (Sections 3.3 and 3.4). Initial post-construction monitoring activities occurred on June 26, 2023 (initial topographic survey; Section 4.1) and August 3, 2023 (initial semiannual groundwater monitoring; Section 4.2).

Aspect was the engineering firm responsible for overseeing, monitoring, and reporting the cleanup construction activities (Engineer). Aspect provided regular status updates to Ecology throughout the duration of the cleanup construction activities in the form of email updates and formal progress reports, and consulted with the City and Contractor daily to weekly.

3.2 Landfill Waste Consolidation

This section describes the activities related to relocating contaminated soil and solid waste present on the south-adjoining property, consolidation of that waste to within the footprint of the low permeability soil cap area located on Property, and restoration activities conducted at the south-adjoining property.

The results of the RI indicated that municipal solid waste extended onto the south-adjoining property to an estimated extent of up to 20 feet south of the Property line. Initial efforts to relocate and consolidate the solid waste onto the Property suggested that the actual extent of the solid waste was greater than anticipated. To delineate the actual vertical and horizontal extent of waste beyond the Property line, exploratory test pits and soil borings were performed on the south-adjoining property, following execution of the Access Agreement between the City and Miles on July 9, 2022, and its amendments dated December 2, 2022 and February 10, 2023. Aspect observed 20 direct-push soil borings, designated AB-01 through AB-20 and nine test pits, designated ATP-01 through ATP-09 to determine the limits of the waste on the south-adjoining property and to inform excavation planning and material quantities. The borings were advanced from the existing ground surface to maximum depths of 45 feet, through fill and landfill waste (where encountered) to underlying native soil consisting of recessional outwash silt and sand (Aspect, 2023).

Excavation, consolidation, and restoration activities are summarized below:

- **Excavation.** Based on the explorations, the excavation for removal of landfill waste from the south-adjoining property extended to approximately 165 feet south of the Property line and 380 feet in the east-west direction, and extended vertically to 20 to 40 feet bgs, or elevation 123 feet (NAVD88). The lateral extent of the landfill waste consolidation excavation on the south-adjoining property is shown on Figure 2.
- **Landfill Waste Consolidation.** Excavated landfill waste and other material the Engineer deemed unsuitable for use as waste excavation backfill was placed in

existing ground surface depressions in the landfill area on the Property within the footprint of the low permeability soil cap. The waste and unsuitable material was compacted by the Contractor.

- **Restoration.** Excavation of the landfill waste on the south-adjoining property required temporary removal of an approximately 25-foot-tall berm road to reach the underlying landfill waste. Restoration activities on the south-adjoining property included backfilling the excavation using overburden materials approved by the Engineer and native borrow soil sourced from the Property, and re-construction of the berm road. Backfill material sourced from the on-Property borrow area generally consisted of native sand and gravel that was hauled from the Property to the excavation using off-road haul trucks. Backfill was placed and graded level in approximately 2-foot-thick lifts using bulldozers. Each lift was compacted using a vibratory smooth drum roller. The final elevation of the berm road was lower than it was before the excavation; this lower elevation was approved by the south-adjacent property owner. Following reconstruction of the berm road by the Contractor, the City placed a layer of crushed rock to surface the road.

3.3 Low Permeability Soil Cap Construction

Construction of the low permeability soil cap over the full extent of the contaminated soil and solid waste (collectively, the landfill waste) is the primary engineering control to prevent receptor exposure to landfill waste. In order from deepest to shallowest, the soil cap consists of a foundation layer, a geotextile isolation barrier, a layer of imported clean low permeability soil, and a vegetative layer of topsoil seeded with grasses, and complies with landfill closure specifications in WAC 173-304-460(e). Table 1 summarizes the approximate final quantities and sources for each of these layers:

Table 1. Soil Cap Construction Quantities

Description	Quantity	Source
Foundation Layer	9,913 CY	On-Property Borrow
Geotextile Isolation Barrier	191,900 SF	ACF West Inc.
Imported Low Permeability Soil	12,340 CY	Delphi Quarry
Topsoil	3,550 CY	Delphi Quarry

Notes:
CY – cubic yards
SF – square feet

Additional description of these layers, the work completed to prepare and construct them, and inspection and quality control are presented in the following sections. The record drawings provided in Appendix B include the as-built topographic survey for the top of each soil cap layer.

3.3.1 Surface Preparation

The existing ground surface within the soil cap area was cleared and grubbed of all vegetation. As indicated in Section 2.1, existing ground surface depressions were filled

with landfill waste and geotechnically unsuitable materials excavated from the south-adjacent property. Once the existing ground surface depressions were filled, the remaining landfill waste and unsuitable materials were placed, graded, and compacted in a 'dome' configuration with side slopes between 2 and 33 percent in accordance with WAC standards (WAC 173-304-460).

3.3.2 Foundation Layer

The foundation layer consisted of a 2-foot-thick layer of native sand and gravel (sourced from the on-Property borrow area) placed directly over the landfill waste and geotechnically unsuitable material. The two-foot-thickness was necessary (and agreed upon by Aspect, the Contractor, and the City) to create a 'bridge' over the wet/saturated landfill waste and geotechnically unsuitable materials derived from the off-Property waste excavation so that the necessary level of compaction of the overlying low permeability soil layer could be achieved. Where appreciably soft landfill waste and unsuitable materials were present in the northern approximately 1/3 of the soil cap area, concrete rubble was placed first and capped with the native sand and gravel so that no sharp concrete edges or points could protrude into the overlying geotextile. The foundation layer was generally placed in two 12-inch-thick lifts that were graded with a bulldozer to match the dome-shaped surface of the underlying landfill waste. Each lift was compacted with a vibratory smooth drum roller.

3.3.2.1 Inspection and Quality Control

Aspect was on site on a nearly continuous basis to observe and inspect placement and compaction of the foundation layer. Aspect qualitatively evaluated compaction of the foundation layer by observing the behavior of the material when passed over by heavy construction equipment, and by hand-probing with a T-probe. Through the inspections, Aspect verified that the foundation layer was placed and compacted to a relatively firm and unyielding condition, in accordance with the project specifications.

In addition to the qualitative inspections completed by Aspect, the Contractor hired a materials testing firm (Materials Testing and Consulting, Inc) to conduct in-place density testing on the compacted foundation layer materials. The density testing indicated foundation layer materials were compacted to levels ranging between 76 to 99 percent of the materials' maximum dry density. The required level of compaction for the foundation layer per the project specifications is 85 percent. Based on our observations, we conclude the density tests below this value were likely due to the material at those test locations being different than the proctor material and/or were influenced by the soft waste and unsuitable materials below. Based on our visual/manual inspection of the material and our observations of the compactive effort applied by the Contractor, we conclude the foundation layer was acceptable as constructed.

3.3.3 Geotextile Isolation Barrier

A geotextile isolation barrier was laid over the top of the foundation layer for the purpose of preventing terrestrial contact with underlying landfill waste. The geotextile isolation barrier was anchored in an anchor trench around the perimeter of the soil cap. The manufacturer's specifications for the geotextile are included as Appendix C.

3.3.3.1 Inspection and Quality Control

Aspect verified the geotextile that was used matched the geotextile that was originally submitted by the Contractor and accepted by Aspect prior to the start of construction. Aspect was on site on a nearly continuous basis to observe excavation of the anchor trench and to inspect placement of the geotextile isolation barrier. We verified the anchor trench depth and width were in accordance with the plans, the geotextile was placed under tension with minimal wrinkles, and that adjacent rolls of geotextile overlapped at least 6 inches at the seams in accordance with the plans.

3.3.4 Imported Low Permeability Soil

A 2-foot-thick layer of imported low permeability soil meeting the requirements of WAC 173-304-460(3)(e)(i) was placed over the geotextile isolation barrier. The low permeability soil was placed in 6- to 12-inch-thick lifts that were graded with a bulldozer to match the dome-shaped surface of the underlying foundation layer. Each lift was compacted with a vibratory sheepsfoot roller.

3.3.4.1 Testing, Inspection, and Quality Control

3.3.4.1.1 Chemical Testing

The low permeability soil consisted of native soil from the Contractor's rock quarry (Delphi Quarry). The Contractor submitted samples of the low permeability soil to a laboratory for testing to determine the materials' chemical properties in accordance with the CAP, as follows:

- A total of 34 representative soil samples were collected by the Contractor and analyzed by a Washington State-accredited laboratory for the following:
  - Gasoline- , diesel- , and oil-range petroleum hydrocarbons using Northwest Methods NWTPH-Gx and NWTPH-Dx.
  - MTCA 5 metals, including arsenic, cadmium, chromium, lead, and mercury,
  - Polycyclic aromatic hydrocarbons (PAHs) using EPA Method 8270.

The analytes tested were not detected above the laboratory reporting limits with the exception of chromium, which was detected in all 34 samples ranging from 7 to 18 mg/kg. Detected concentrations of chromium and reporting limits for undetected analytes are below the standard MTCA Method A/B soil cleanup levels for unrestricted land use, established as the applicable and acceptable soil quality criteria in Table A-2 of the Compliance Monitoring Plan included with the EDR (Aspect, 2022a); therefore, the imported material was determined to be acceptable for construction of the low permeability layer of the soil cap. Chemical testing laboratory reports are included in Appendix D.

3.3.4.1.2 Laboratory Permeability and Proctor Tests

The Contractor submitted samples of the low permeability soil to a materials testing laboratory (HWA Geosciences, Inc) to conduct moisture-density-permeability relationship tests (Proctor tests and hydraulic conductivity tests). The testing showed that the permeability specification (a permeability of no more than 1 x 10^{-6} cm/sec) is met if the material is compacted to at least 93 percent of its maximum dry density. The laboratory Proctor tests and hydraulic conductivity tests are included in Appendix E.

3.3.4.1.3 Inspection and Quality Control

Aspect was on site on a nearly continuous basis to observe and inspect placement and compaction of the low permeability soil layer. Aspect verified the imported low permeability material was consistent with the materials submitted for laboratory testing by the Contractor. Aspect qualitatively evaluated compaction of the low permeability soil layer by observing the behavior of the material when passed over by heavy construction, and by hand-probing with a T-probe. Through these inspections, Aspect verified the low permeability soil layer was placed and compacted to a relatively firm and unyielding condition in accordance with the project specifications. Aspect also verified the final thickness of the low permeability soil layer was 2 feet based on grade stakes that were established by the Contractor under observation by Aspect. The use of grade stakes to verify thickness of the low permeability soil layer and overlying topsoil layer was collectively agreed upon by Aspect and the Contractor due to the substantial thickness of the soft landfill waste, which will compress as additional material is placed over it to construct the cap and make surveying an inaccurate means to verify the final thickness.

In addition to the qualitative inspections completed by Aspect, the Contractor's material testing subcontractor conducted in-place density testing on the compacted low permeability soil layer materials. The density testing indicated the low permeability soil materials were compacted to at least 93 percent of the materials' maximum dry density to meet the permeability specification. In cases where the density testing showed a level of compaction that did not meet the permeability specification (i.e., less than 93 percent of the material's maximum dry density), the Contractor stopped working the material and allowed it to dry out, recompacted the material, and re-tested compaction. The re-tests showed that the materials were compacted to at least 93 percent of their maximum dry density to meet the permeability specification. The density test field reports from the Contractor's materials testing subcontractor are included in Appendix F.

3.3.5 Vegetative Topsoil

A 6-inch-thick layer of vegetative topsoil was placed over the imported low permeability soil layer. The topsoil material was the same material as the low permeability soil layer (native overburden stripped from the Contractor's quarry, which meets the specification for Topsoil Type C per the Washington State Department of Transportation (WSDOT) Standard Specifications and consistent with the requirements of WAC 173-304-460(3)(e)(iii)), except that the Contractor screened out all particles larger than 3 inches in diameter. The vegetative topsoil was placed in a single 6-inch-thick layer that was graded with a bulldozer to match the dome-shaped surface of the underlying low permeability soil layer. The vegetative topsoil was not compacted. Following placement of the topsoil layer, it was hydroseeded to establish vegetative cover and prevent erosion.

3.3.5.1 Inspection and Quality Control

Aspect verified the final thickness of the topsoil layer was 6 inches based on grade stakes that were established by the Contractor under observation by Aspect.

3.3.6 Deviations from the Plans

During construction, we noted the following deviations from the plans related to the soil cap construction:

1. **Limits of the soil cap.** The limits of the soil cap were modified based on field conditions and actual landfill waste extents revealed during construction. This included extending the soil cap to the south property line and reducing the northern extent of the soil cap.
2. **Elevation of the soil cap.** The final elevations of the soil cap were higher than originally planned due to the increased volume of landfill waste excavated from the south-adjacent property and the need to construct a 2-foot-thick foundation layer over the landfill waste as previously discussed.
3. **Topsoil thickness.** The thickness of the topsoil layer was reduced from 12 inches to 6 inches with approval from the Engineer. A minimum topsoil thickness of 6 inches is specified in WAC 173-304-460(3)(e)(iii).
4. **Anchor trench modification.** The location of the anchor trench on the south side of the soil cap area was modified to be within the footprint of the soil cap which extends up to the Property boundary. The modified anchor trench detail is shown in the record drawings (Appendix B).

Aspect concludes the deviations described above conform with landfilling standards in WAC 173-304-460 and engineering concepts presented in the EDR, and therefore are acceptable.

3.3.7 Soil Cap Conformance with WAC Standards

Table 2 summarizes the WAC landfill soil cap design standards and the as-built soil cap condition.

Table 2. Soil Cap Design Standards and As-Built Conditions

Item	WAC Standard	As-Built Condition
Thickness of low permeability soil	2 feet	2 feet
Permeability of low permeability soil	1 x 10^{-6} cm/sec (max)	1 x 10^{-6} cm/sec or lower
Topsoil thickness	6 inches	6 inches
Surface Slopes Grade	2 to 33 percent	Up to 23 percent

See Figure 2 for a map of the soil cap with contoured surface elevations.

3.4 Physical Barriers

Physical barriers to discourage unauthorized access to the landfill cap area consisted of chain-link fencing and signage. The new 6-foot-tall chain-link fencing was installed around the perimeter of the soil cap, with two locking 12-foot-wide double swing gates on the east and west sides of the cap. Signage was posted at each gate and at approximately 300-foot spacing along the fencing surrounding the soil cap, with the following text appearing in both English and Spanish languages:

Restricted Area – No Trespassing
City of Shelton Property
Contamination Cleanup In Progress
Contact: Andrew Smith, Dept. of Ecology
Phone: (360) 407-6316

Pictures of the fencing and signage are included in Photographs 9, 10, and 11 in Appendix A.

3.5 Final Inspection

The final inspection of the cleanup construction activities was conducted on June 14, 2023 by the Engineer. On that date, the Engineer noted the following:

- Construction of the physical barriers (fencing and signage) was complete.
- Construction of the soil cap was complete, with side slopes ranging from about 12 to 13 degrees (21 to 23 percent; below the maximum allowable grade of 33 percent per WAC 173-304-460).
- The surface of the landfill cap was hydroseeded, as were areas beyond the soil cap that had been disturbed by cleanup construction activities.
- Groundwater monitoring wells AMW-1, AMW-2, and AMW-4 remained in-place, accessible, and protected by bollards.[2]
- Construction of the access road and berm on the south-adjoining property was complete, with a thin layer of crushed rock placed at ground surface.

No additional or outstanding on-site cleanup construction work items were observed. The record drawings for the soil cap are included as Appendix B.

4 Post-Construction Confirmational Monitoring

Post-construction confirmational monitoring is described in this section. The purpose of the confirmational monitoring is to confirm the long-term effectiveness of the cleanup action once the cleanup standards have been met at the points of compliance. Confirmational monitoring includes visual inspections of the soil cap and physical barriers, topographic surveys to demonstrate little-to-no settlement of the soil cap, and groundwater sampling to demonstrate little-to-no leachate generation.

4.1 Topographic Survey

Following construction of the soil cap, licensed surveyor Apex Engineering of Tacoma, Washington performed an initial post-construction survey on June 26, 2023. The initial post-construction survey consisted of establishing eight settlement survey benchmarks, spaced roughly equally across the soil cap, to be used for annual settlement monitoring.

[2] Well AMW-3 is located outside of the cleanup construction area and remains in-place and accessible.

The locations of the benchmarks are shown on Figure 2 and in the survey report included in Appendix G.

The eight benchmarks will be re-surveyed annually. The next survey event will occur in June 2024, at which time the surveyor will attest to whether the settlement criteria have been met. Settlement criteria are established by Ecology in the Addendum to "Preparing for Termination of Post-Closure Activities at Landfills Closed under Chapter 173-304 WAC" guidance document.

4.2 Groundwater Monitoring

The first post-construction groundwater monitoring event occurred on August 3, 2023, and the second post-construction groundwater monitoring even is scheduled for February 2024. Results of the first and second events will be presented in an annual groundwater monitoring report, prepared following the February 2024 event.

Groundwater monitoring events will continue on a semiannual basis occurring in August and February of each year for a minimum period of 5 years (through February 2028) and for at least 2 years after compliance is achieved. Compliance will be achieved when the average concentration of four consecutive sampling events is below the cleanup level or background concentration.

5 Conclusion

Cleanup construction activities at the Site occurred between January 9 and June 14, 2023, with oversight and final inspection performed by Aspect on behalf of the City of Shelton. Based on the observations during construction, it is the opinion of the Engineer that the cleanup construction was completed in accordance with standard industry practices, in compliance with the technical specifications, and in accordance with the CAP (Ecology, 2021) and EDR (Aspect, 2022) approved by Ecology.

6 References

Aspect Consulting, LLC (Aspect), 2021, Final Remedial Investigation and Feasibility Study Report, Shelton C Street Landfill, Shelton, Washington, December 16, 2021.

Aspect Consulting, LLC (Aspect), 2022, Engineering Design Report, Shelton C Street Landfill, Shelton, Washington, July 11, 2022.

Aspect Consulting, LLC (Aspect), 2023, Geotechnical Engineering Recommendations, C Street Landfill Waste Excavation Expansion, Shelton, Washington, April 3, 2023.

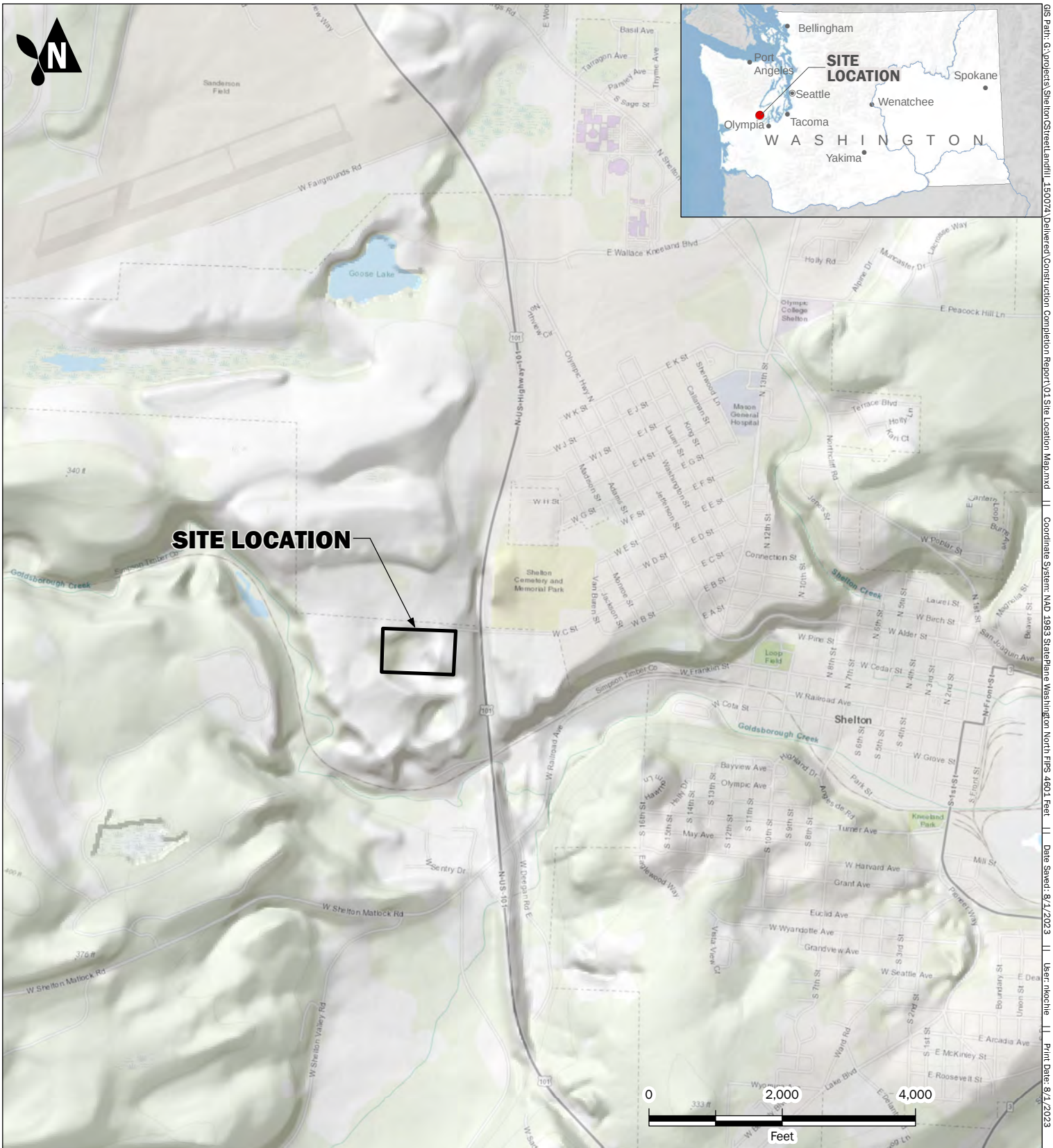
Washington State Department of Ecology (Ecology), 2021, Cleanup Action Plan, Shelton C Street Landfill, City of Shelton, August 10, 2021.

7 Limitations

Work for this project was performed for the City of Shelton (Client), and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This report does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

FIGURES



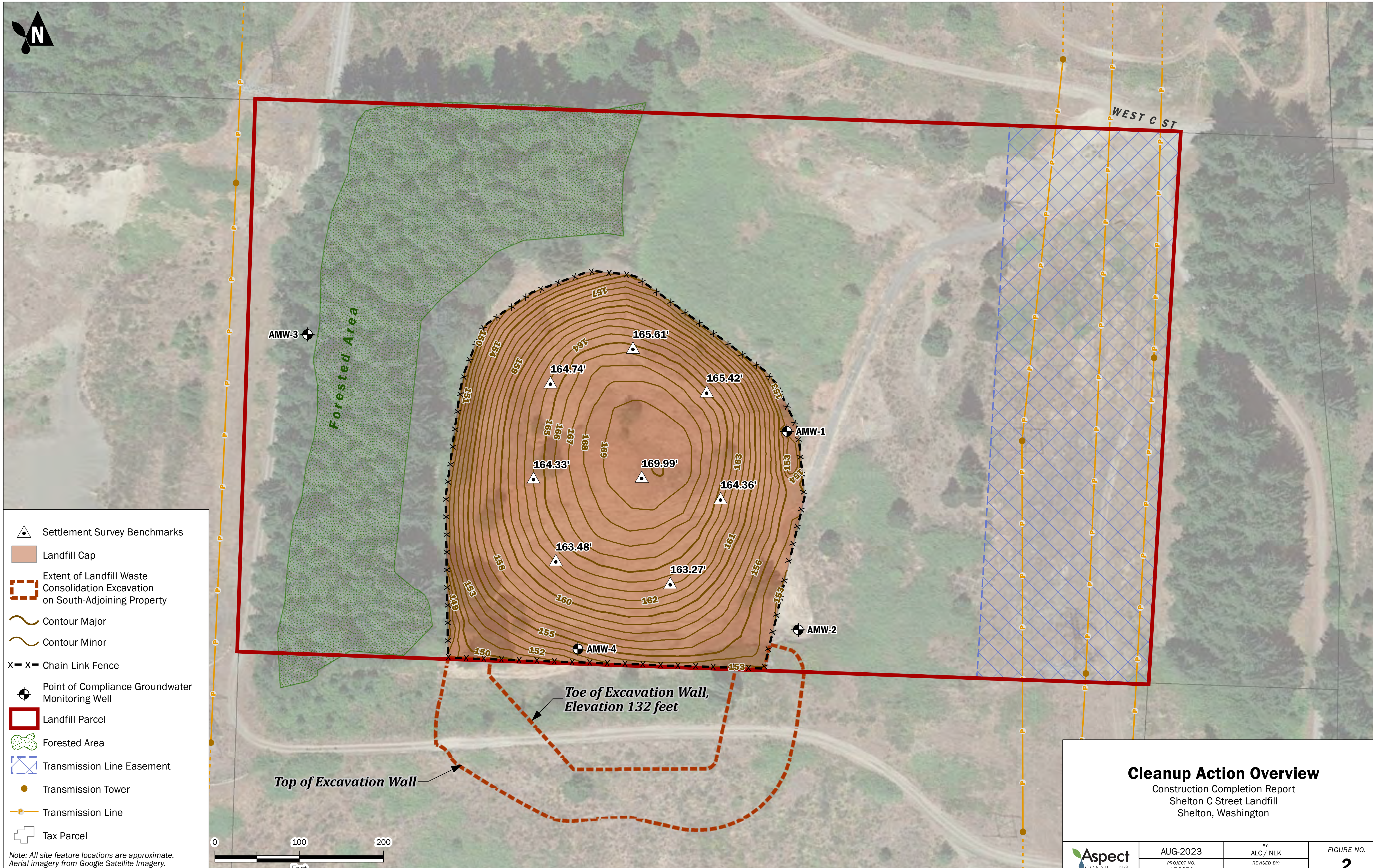
Site Location Map

Construction Completion Report
Shelton C Street Landfill
Shelton, Washington

Aspect CONSULTING	AUG-2023	BY: ALC / NLK	FIGURE NO. 1
	PROJECT NO. 150074	REVISED BY: ---	

Basemap Layer Credits | | Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

GIS Path: G:\projects\SheltonCStreetLandfill_150074\Delivered\Construction Completion Report\01 Site Location Map.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 8/1/2023 || User: nlochie || Print Date: 8/1/2023


N
WEST C ST
Forested Area
AMW-1
AMW-2
AMW-3
AMW-4
165.61'
164.74'
165.42'
164.33'
169.99'
164.36'
163.48'
163.27'
157
150
154
159
164
151
165
166
167
168
169
163
153
154
161
158
156
153
149
160
162
155
152
150
153
Toe of Excavation Wall,
Elevation 132 feet
Top of Excavation Wall
Settlement Survey Benchmarks
Landfill Cap
Extent of Landfill Waste Consolidation Excavation on South-Adjoining Property
Contour Major
Contour Minor
Chain Link Fence
Point of Compliance Groundwater Monitoring Well
Landfill Parcel
Forested Area
Transmission Line Easement
Transmission Tower
Transmission Line
Tax Parcel
Note: All site feature locations are approximate.
Aerial imagery from Google Satellite Imagery.
0
100
200
Feet

Cleanup Action Overview
Construction Completion Report
Shelton C Street Landfill
Shelton, Washington

Aspect CONSULTING | AUG-2023 PROJECT NO. 150074 | BY: ALC / NLK REVISED BY: - - - | FIGURE NO. 2

GIS Path: G:\projects\SheltonCStreetLandfill_150074\Delivered\Construction Completion Report\02 Cleanup Action Overview.mxd || Coordinate System: NAD 1983 StatePlane Washington South FIPS 4602 Feet || Date Saved: 8/8/2023 || User: nkochie || Print Date: 8/8/2023

APPENDIX A

Photographs

Photograph 1. View of the Property landfill area prior to the start of cleanup construction, during vegetation grubbing. Photo faces south-southwest.

Photograph 2. View of the Property landfill area following vegetation grubbing. Photo faces west.

Photograph 3. Exploratory drilling on the south-adjoining property to delineate the extent of landfill waste beyond the south Property boundary. Photo faces west.

Photograph 4. Landfill waste relocation excavation on south-adjoining property. Landfill waste shown in dark-colored layers. Photo faces north.

Photograph 5. Backfill and compaction of landfill waste relocation excavation on south-adjoining property. Photo faces north.

Photograph 6. Construction of foundation layer on Property. Wells AMW-02 and AMW-03 are shown. Photo faces west-northwest.

Photograph 7. Installation of geotextile barrier. Photo faces north-northeast.

Photograph 8. Placement of low permeability soil overlying geotextile barrier. Photo faces north-northeast.

Photograph 9. Hydroseeded areas following completion of cleanup construction. Photo faces northwest.

Photograph 10. Reconstructed access road on south-adjoining property, following completion of cleanup construction. Photo faces west.

Photograph 11. Typical fencing and signage installed around soil cap on the Property.

APPENDIX B

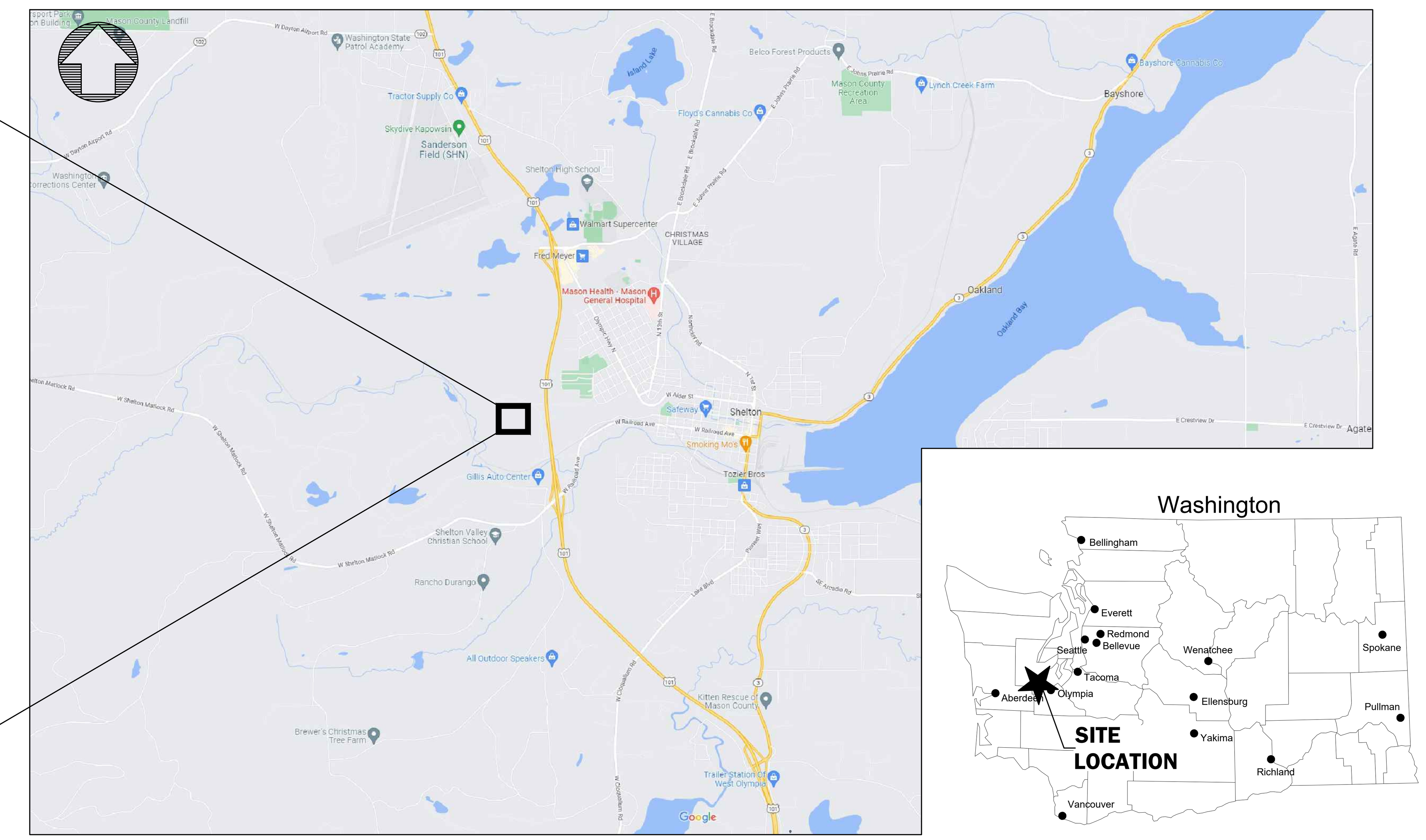
Record Drawings

CLEANUP ACTION RECORD DRAWINGS

SHELTON C STREET LANDFILL
SHELTON, WASHINGTON

VICINITY MAP (BING)

0 1000 2000 Feet



LOCATION MAP (GOOGLE)

0 4000 8000 Feet

CALL 2 WORKING DAYS BEFORE YOU DIG: 811 (UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

ENGINEER:

ASPECT CONSULTING, LLC
710 SECOND AVE, SUITE 550 SEATTLE, WA 98104
ATTN: ERIC SCHELLENGER, P.E.
206-780-7745

PROPERTY OWNER AND LEGAL DESCRIPTION

ADDRESS: 525 W COTA ST
OWNER: CITY OF SHELTON, WASHINGTON
SEC-TWN-RNG-QTR: SEC 24, TWP 20, RNG 4W (NE-NW/4)

LEGAL DESCRIPTION: *TR43 OF NE NW 45/68*

MASON COUNTY PARCEL NO.: 42024-21-60430
LOT AREA SQUARE FOOTAGE: 713,994 SQFT
BUILDING FOOTPRINT SQUARE FOOTAGE: 0 SQFT

BASIS OF SURVEY (EXISTING TOPOGRAPHY)

SURVEY COMPLETED BY: PLS, INC., ISSAQUAH, WASHINGTON, 10/13/2017.

HORIZONTAL DATUM: NAD 83/2011, WASHING COORDINATE SYSTEM, SOUTH ZONE.

VERTICAL DATUM: NAVD 88 WSDOT BENCHMARK "SLEETH" MONUMENT I.D. 49268, PUBLISHED ELEVATION 107.04'.

BASIS OF RECORD DRAWING SURVEY (SOIL CAP ELEVATIONS)

SURVEY COMPLETED BY: MNT 2 COAST PROFESSIONAL LAND SURVEYORS, TUMWATER, WASHINGTON, 05/11/2023.

HORIZONTAL DATUM: NAD 83/2011, WASHINGTON COORDINATE SYSTEM, SOUTH ZONE.

VERTICAL DATUM: NAVD 88 BASED ON CONTROL PROVIDED BY BRUMFIELD.

ERIC SCHELLENGER, STATE OF WASHINGTON, 56315, REGISTERED PROFESSIONAL ENGINEER
08/17/2023

REV.	DESCRIPTION	DATE	APPR.
1	RECORD DRAWINGS	8/17/2023	ECS
0	ISSUED FOR CONSTRUCTION	11/18/2022	SEA

REVISED BY: -
DRAWN BY: CMV
DESIGNED BY: ECS
PROJECT NUMBER: 150074
REVISION: 1
DATE: 8/17/2023

Aspect CONSULTING

COVER, LOCATION MAP, AND DRAWING INDEX
CLEANUP ACTION CONSTRUCTION PLANS
SHELTON C STREET LANDFILL
SHELTON, WASHINGTON

SHEET REFERENCE NUMBER:
G-01
SHEET 1 OF 6

NOTE: FINAL LIMITS OF SOIL CAP WERE MODIFIED BASED ON FIELD CONDITIONS.

ELEVATIONS ACCURATE AT TIME OF THE SURVEY.

SURVEY LEGEND:

- FOUND MAG NAIL WITH WASHER
- FOUND IRON PIPE W/CAP STAMPED 'SLEETH'
- SET PK NAIL W/WASHER STAMPED 'KAP 49286'
- SET REBAR AND CAP STAMPED 'KAP 49286'
- TREE (CONIFEROUS) WITH TRUNK DIAMETER NOTED
- TREE (DECIDUOUS) WITH TRUNK DIAMETER NOTED
- BOLLARD
- GUY POLE
- UNDERGROUND GAS MARKER
- CONCRETE SURFACE
- GRAVEL SURFACE
- MONITORING WELL
- TPN TAX PARCEL NUMBER

LEGEND

- POINT OF COMPLIANCE GROUNDWATER MONITORING WELL
- 60 PROPOSED GRADE CONTOURS
- LANDFILL PARCEL
- LIMIT OF GEOTEXTILE
- CHAIN LINK FENCE LOCATION
- LIMIT OF CLEAR, GRUB & DISTURBANCE
- ON-PROPERTY BORROW AREA
- 1986 SLUDGE DISPOSAL AREA
- FORESTED AREA BOUNDARY
- ELEVATION CONTOUR (2FT INTERVAL)
- TRANSMISSION LINE EASEMENT BOUNDARY
- WASTE BEYOND LANDFILL PARCEL

ERIC SCHLIENGER — STATE OF WASHINGTON — 56315 — REGISTERED PROFESSIONAL ENGINEER

08/17/2023

REV.	DESCRIPTION	DATE	APPR.
1	RECORD DRAWINGS	8/17/2023	EOS
0	ISSUED FOR CONSTRUCTION	11/18/2022	SEA

REVISED BY: -
DRAWN BY: CMV
DESIGNED BY: EOS
PROJECT NUMBER: 150074
REVISION: 1
DATE: 8/17/2023

Aspect CONSULTING

FOUNDATION LAYER PLAN

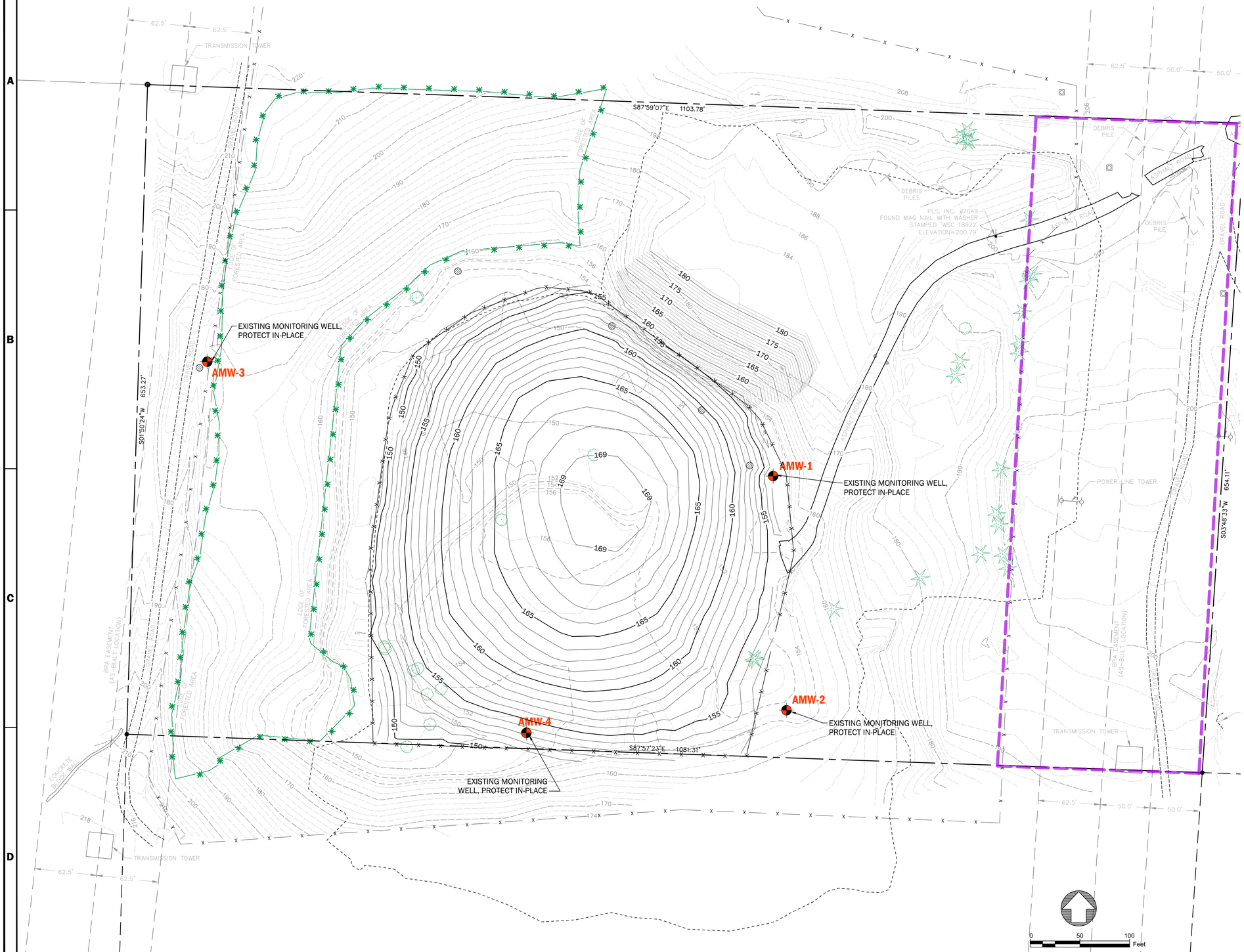
CLEANUP ACTION CONSTRUCTION PLANS
SHELTON C STREET LANDFILL
SHELTON, WASHINGTON

SHEET REFERENCE NUMBER:

C-01

SHEET **2** *OF* **6**

CAD Path: Q:\City of Shelton\150074 Shelton C Street Landfill\2023-08 Record Dwgs\150074 Plan Set RECORD DWG.dwg C-01 | Date Saved: 8/8/2023 2:00:48 PM | User: cvanslyke



NOTE: ELEVATIONS ACCURATE AT TIME OF SURVEY. THE FINAL THICKNESS OF THE LOW PERMEABILITY SOIL LAYER IS 2 FEET AND WAS VERIFIED IN THE FIELD WITH GRADE STAKES ESTABLISHED BY THE CONTRACTOR.

SURVEY LEGEND:

- FOUND MAG NAIL WITH WASHER
- FOUND IRON PIPE W/CAP STAMPED 'SLEETH'
- SET PK NAIL W/WASHER STAMPED 'KAP 49286'
- SET REBAR AND CAP STAMPED 'KAP 49286'
- TREE (CONIFEROUS) WITH TRUNK DIAMETER NOTED
- TREE (DECIDUOUS) WITH TRUNK DIAMETER NOTED
- BOLLARD
- GUY POLE
- UNDERGROUND GAS MARKER
- CONCRETE SURFACE
- GRAVEL SURFACE
- MONITORING WELL
- TPN TAX PARCEL NUMBER

LEGEND

- POINT OF COMPLIANCE GROUNDWATER MONITORING WELL
- 60 PROPOSED GRADE CONTOURS
- LANDFILL PARCEL
- CHAIN LINK FENCE LOCATION
- LIMIT OF CLEAR, GRUB & DISTURBANCE
- FORESTED AREA BOUNDARY
- ELEVATION CONTOUR (2FT INTERVAL)
- TRANSMISSION LINE EASEMENT BOUNDARY

ERIC SCHLIENGER
STATE OF WASHINGTON
56315
REGISTERED
PROFESSIONAL ENGINEER
08/17/2023

REV.	DESCRIPTION	DATE	APPR.
1	RECORD DRAWINGS	8/17/2023	ECS
0	ISSUED FOR CONSTRUCTION	11/18/2022	SEA

DESIGNED BY: ECS
DRAWN BY: CMV
REVISED BY: -
PROJECT NUMBER: 150074
REVISION: 1
DATE: 8/17/2023

Aspect CONSULTING

LOW PERMEABILITY SOIL LAYER PLAN

CLEANUP ACTION CONSTRUCTION PLANS
SHELTON C STREET LANDFILL
SHELTON, WASHINGTON

SHEET REFERENCE NUMBER:
C-02

SHEET **3** *OF* **6**

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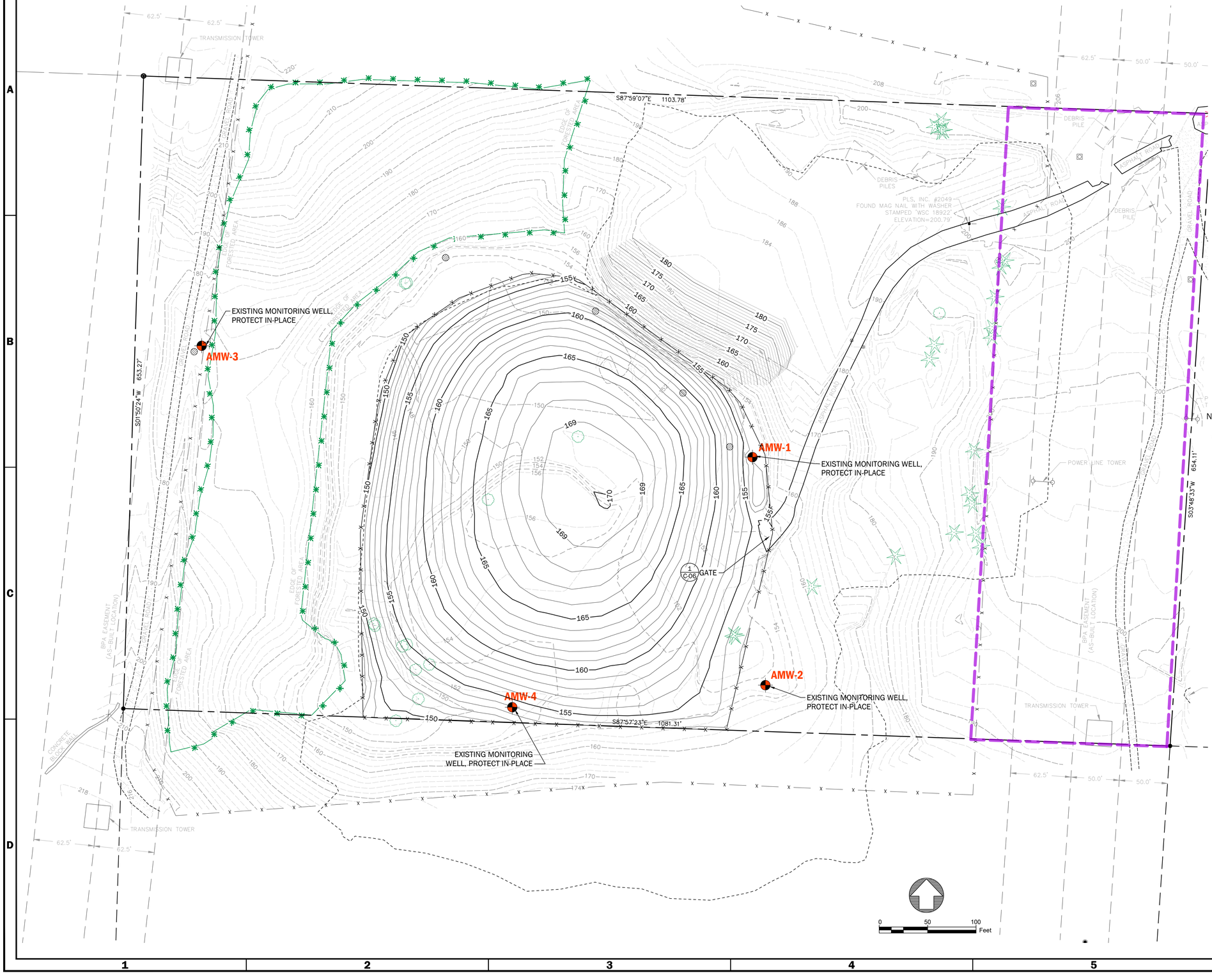

NOTE: ELEVATIONS ACCURATE AT TIME OF SURVEY. THE FINAL THICKNESS OF THE TOP SOIL LAYER IS 0.5 FEET AND WAS VERIFIED IN THE FIELD WITH GRADE STAKES ESTABLISHED BY THE CONTRACTOR.

SURVEY LEGEND:

- FOUND MAG NAIL WITH WASHER
- FOUND IRON PIPE W/CAP STAMPED 'SLEETH'
- SET PK NAIL W/WASHER STAMPED 'KAP 49286'
- SET REBAR AND CAP STAMPED 'KAP 49286'
- TREE (CONIFEROUS) WITH TRUNK DIAMETER NOTED
- TREE (DECIDUOUS) WITH TRUNK DIAMETER NOTED
- BOLLARD
- GUY POLE
- UNDERGROUND GAS MARKER
- CONCRETE SURFACE
- GRAVEL SURFACE
- MONITORING WELL
- TPN TAX PARCEL NUMBER

LEGEND

- POINT OF COMPLIANCE GROUNDWATER MONITORING WELL
- 60 PROPOSED GRADE CONTOURS
- LANDFILL PARCEL
- CHAIN LINK FENCE LOCATION
- LIMIT OF CLEAR, GRUB & DISTURBANCE
- FORESTED AREA BOUNDARY
- ELEVATION CONTOUR (2FT INTERVAL)
- TRANSMISSION LINE EASEMENT BOUNDARY

ERIC SCHLIENGER — STATE OF WASHINGTON — 56315 — REGISTERED PROFESSIONAL ENGINEER

08/17/2023

APPR.	DATE	DESCRIPTION
SEA	8/17/2023	RECORD DRAWINGS
SEA	11/18/2022	ISSUED FOR CONSTRUCTION
EOS		

REV.	DESIGNED BY:	DRAWN BY:	REVISED BY:
0	EOS	CMV	-
1			

Aspect CONSULTING

PROJECT NUMBER: 150074
REVISION: 1
DATE: 8/17/2023

VEGETATIVE TOP SOIL PLAN

CLEANUP ACTION CONSTRUCTION PLANS
SHELTON C STREET LANDFILL
SHELTON, WASHINGTON

SHEET REFERENCE NUMBER:

C-03

SHEET **4** *OF* **6**

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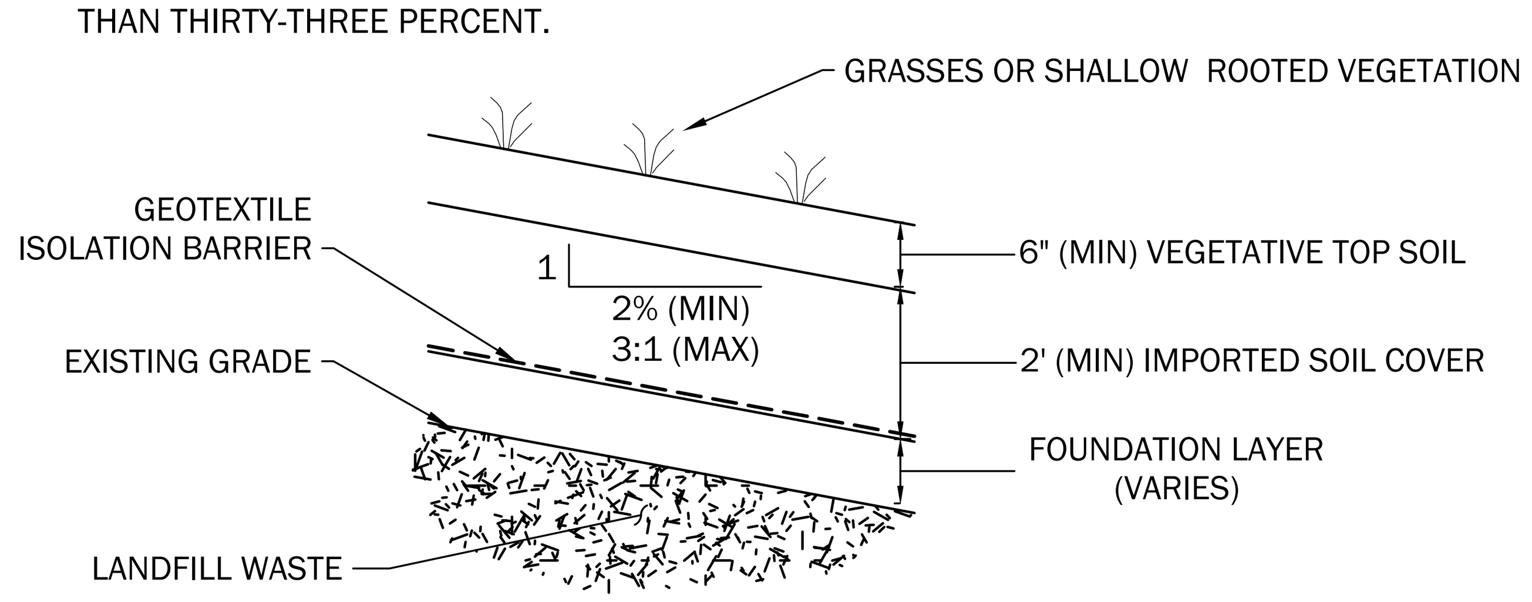
NOTE:

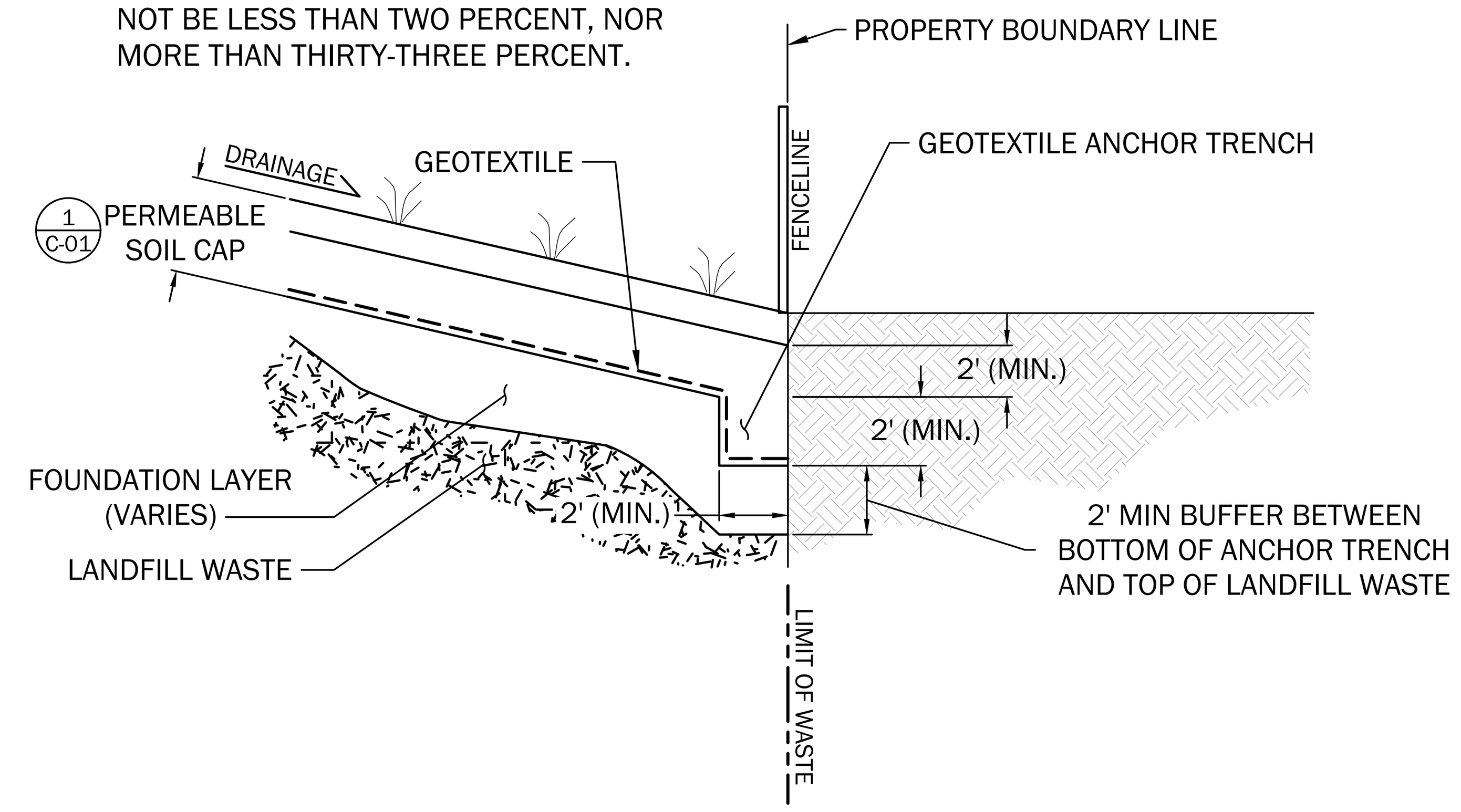
THE GRADE OF SURFACE SLOPES SHALL NOT BE LESS THAN TWO PERCENT, NOR MORE THAN THIRTY-THREE PERCENT.



PERMEABLE SOIL CAP 1 C-04
NTS

NOTE:

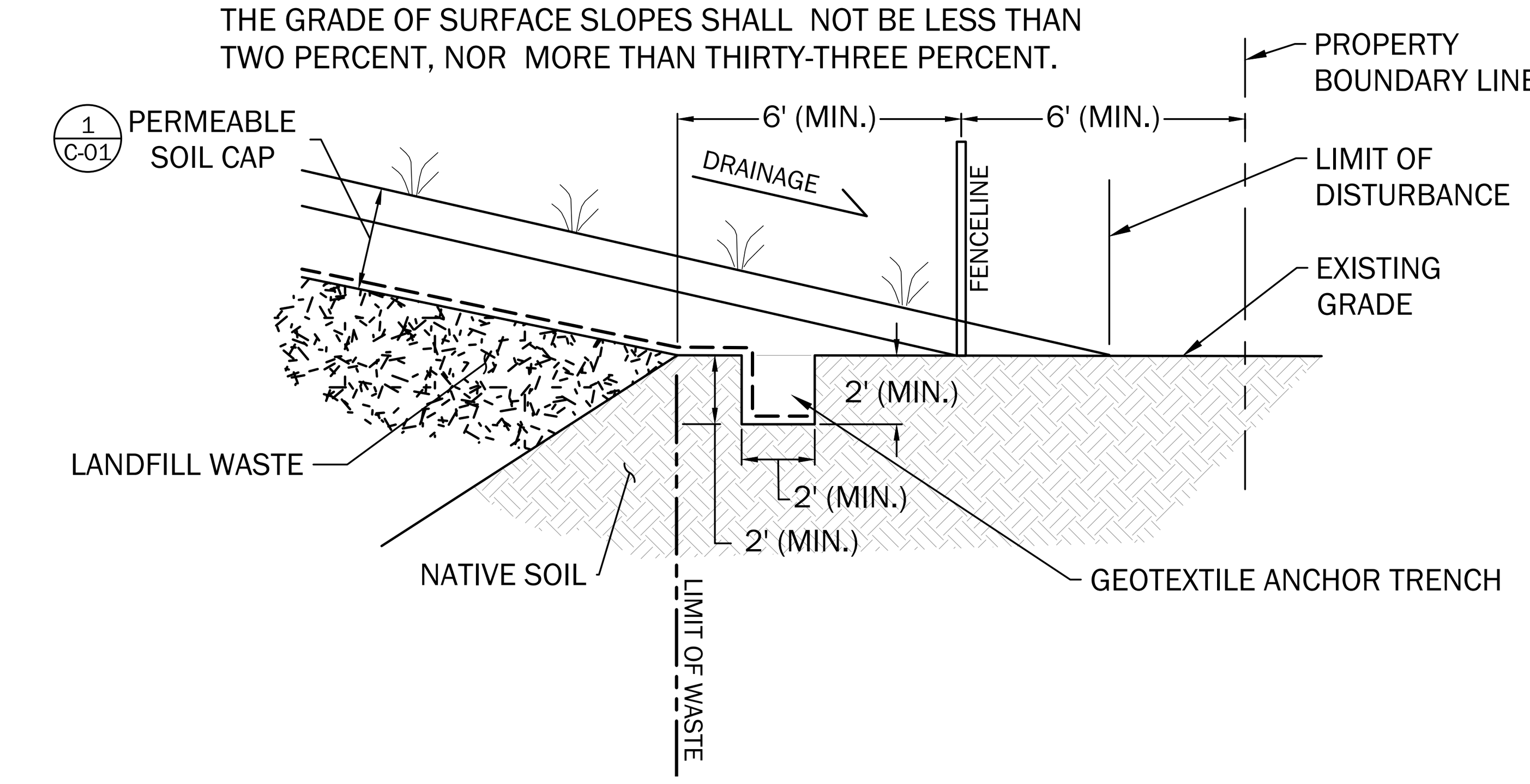
THE GRADE OF SURFACE SLOPES SHALL NOT BE LESS THAN TWO PERCENT, NOR MORE THAN THIRTY-THREE PERCENT.



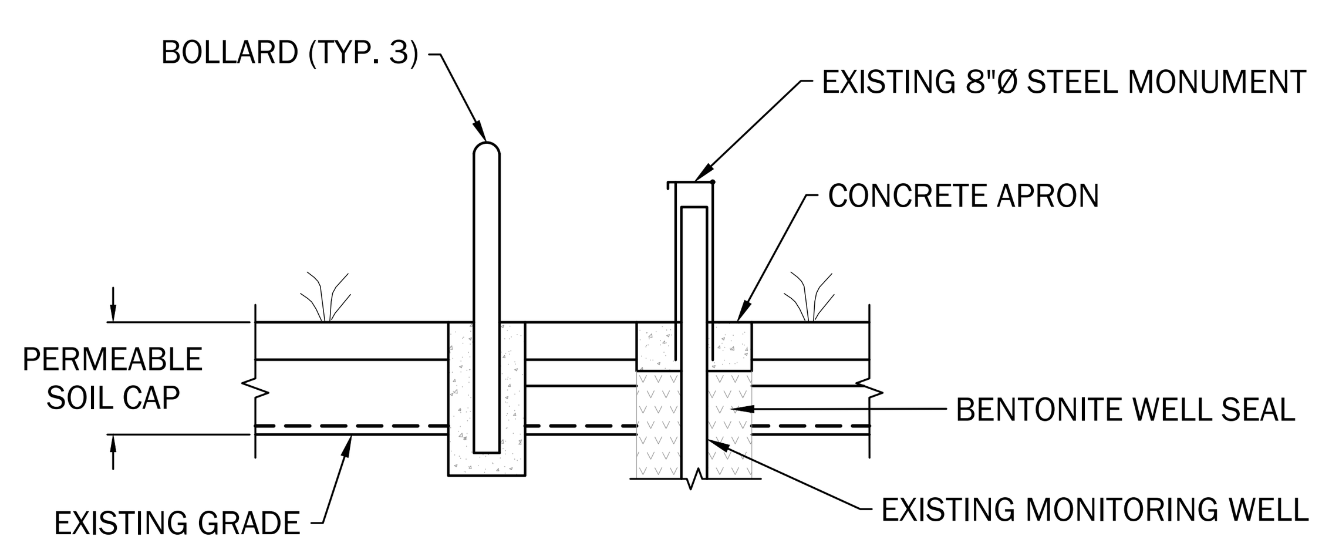
GEOTEXTILE ANCHOR TRENCH - TYPE 1 2 C-04
NTS

NOTE:

THE GRADE OF SURFACE SLOPES SHALL NOT BE LESS THAN TWO PERCENT, NOR MORE THAN THIRTY-THREE PERCENT.



GEOTEXTILE ANCHOR TRENCH - TYPE 2 3 C-04
NTS



MONITORING WELL PROTECTION 4 C-04
NTS

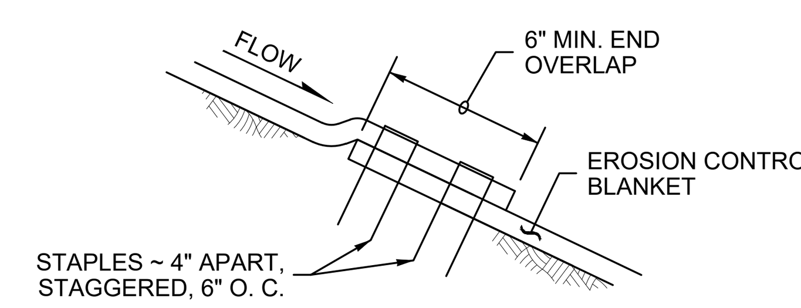
ALL WEATHER FACILITY SIGNAGE

Restricted Area - No Trespassing City of Shelton Property Contamination Cleanup In Progress Contact: Andrew Smith, Dept. of Ecology Phone: (360) 407-6316

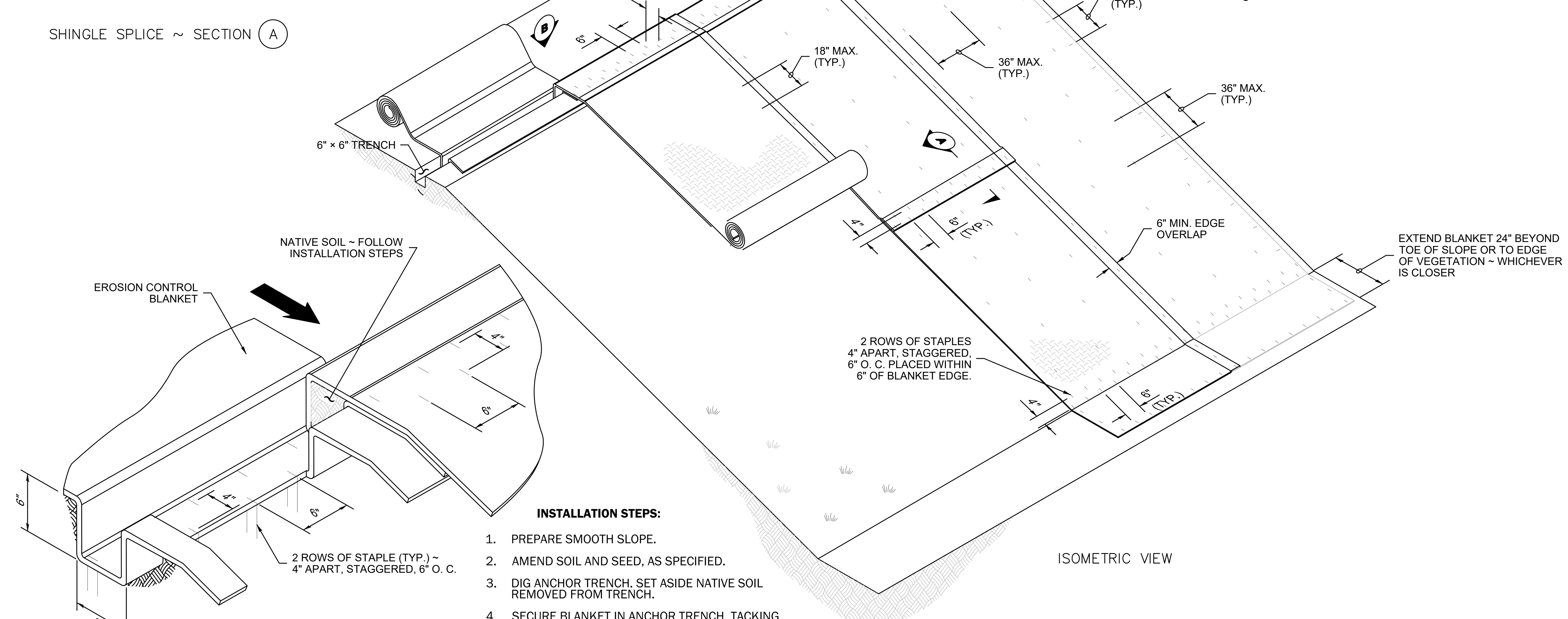
24.0' MIN. SEE NOTE 3

NOTES:
1. POST SIGNAGE AT VEHICULAR ACCESS GATES AND ON FENCING SPACED AT MOST 300 FEET APART.
2. SIGNAGE SHALL BE POSED IN ENGLISH AND SPANISH. CONTRACTOR IS RESPONSIBLE FOR SPANISH LANGUAGE TRANSLATION.
3. TEXT SHALL BE SIZED APPROPRIATELY SO THAT IT IS LEGIBLE FROM A 10-FOOT DISTANCE.

EXAMPLE PERIMETER FENCE SIGNAGE - ENGLISH TEXT 6 C-04
NTS



SHINGLE SPLICE ~ SECTION A



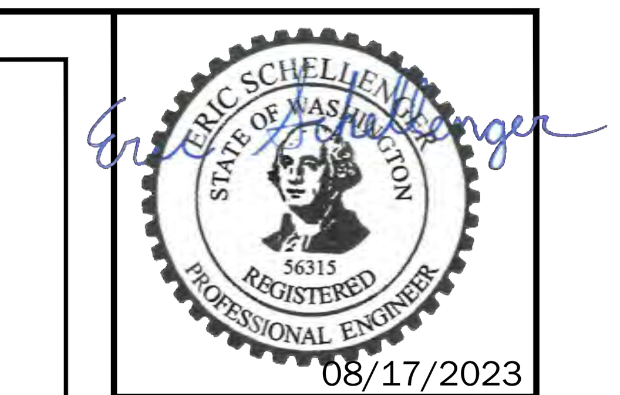
INITIAL ANCHOR ~ DETAIL B

ISOMETRIC VIEW

NOTES
1. More than the minimum of one fastener per square yard may be required due to conditions such as blanket composition, soil type, surface uniformity, and slope steepness.
2. See Standard Specification 8-01.3(3) and 9-14.5)2).
3. Use manufacturer's requirements. When manufacturer's requirements are not provided, use installation requirements shown on Standard Plans.
4. Additional staples may be required on slopes greater than 3H : 1V.

INSTALLATION STEPS:
1. PREPARE SMOOTH SLOPE.
2. AMEND SOIL AND SEED, AS SPECIFIED.
3. DIG ANCHOR TRENCH, SET ASIDE NATIVE SOIL REMOVED FROM TRENCH.
4. SECURE BLANKET IN ANCHOR TRENCH, TACKING OR STAPLING BLANKET AS SHOWN.
5. REPLACE NATIVE SOIL PREVIOUSLY REMOVED FROM TRENCH.
6. ROLL BLANKET DOWN THE SLOPE IN A CONTROLLED MANNER, TAKING CARE TO REMOVE EXCESS SLACK, AND TAKING CARE NOT TO STRETCH BLANKET.
7. STAKE OR STAPLE BLANKET AS SHOWN SO THERE ARE NO GAPS BETWEEN THE BLANKET AND THE SOIL. STAPLE WHILE UNROLLING BLANKET TO MINIMIZE WALKING ON BLANKET.

GEOTEXTILE BLANKET PLACEMENT FOR SLOPES 5 C-04
NTS



08/17/2023

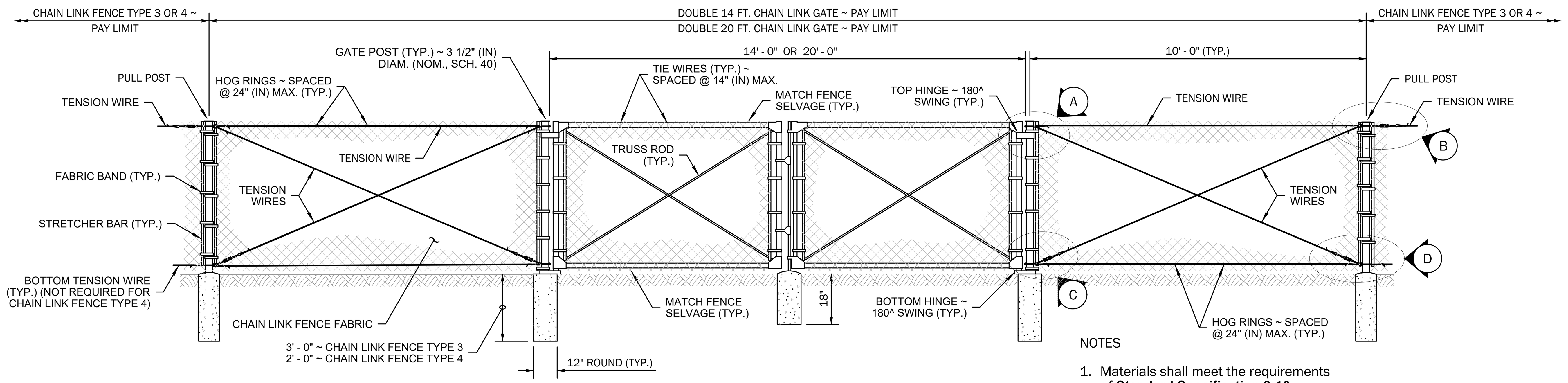
REV.	DESCRIPTION	DATE	APPR.
0	ISSUED FOR CONSTRUCTION	11/18/2022	SEA
1	RECORD DRAWINGS	8/17/2023	ECS

REVISED BY: -
DRAWN BY: CMV
DESIGNED BY: ECS
PROJECT NUMBER: 150074
REVISION: 1
DATE: 8/17/2023

Aspect CONSULTING

DETAILS
CLEANUP ACTION CONSTRUCTION PLANS
SHELTON C STREET LANDFILL
SHELTON, WASHINGTON

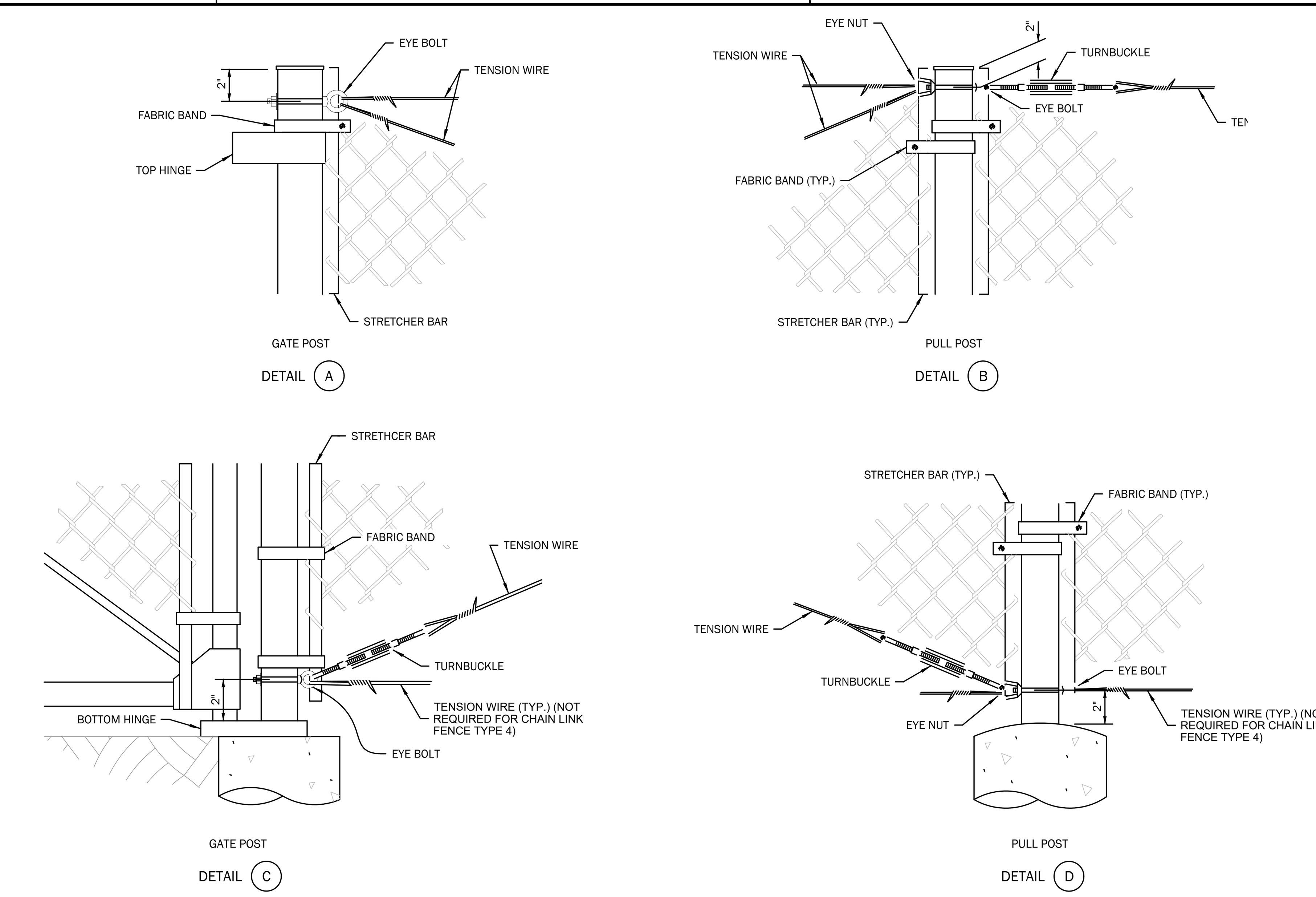
SHEET REFERENCE NUMBER:
C-04
SHEET 5 OF 6



NOTES

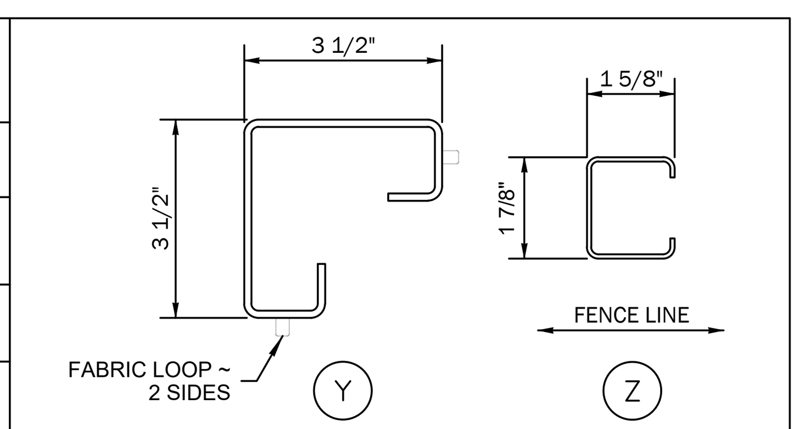
1. Materials shall meet the requirements of **Standard Specification 9-16**.

DOUBLE GATE DETAIL 1 / C-05
NTS



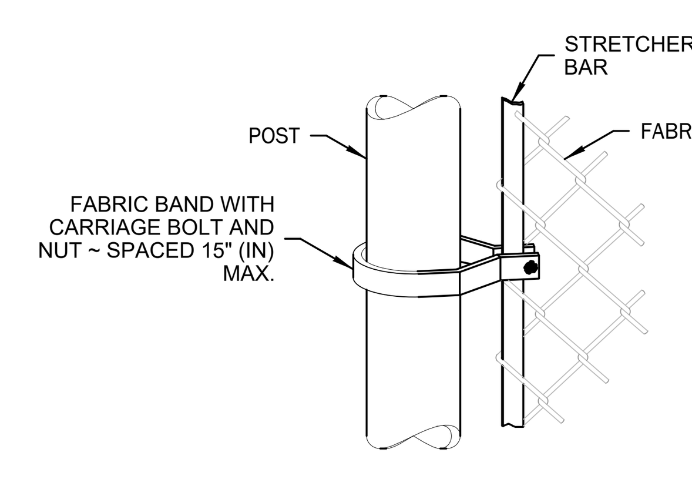
GATE POST CONNECTION DETAILS 2 / C-05
NTS

POST AND RAIL SPECIFICATIONS			
POST	PIPE	ROLL FORMED	
	NOM. SIZE (SCH. 40) I.D.	SECTION	WEIGHT (lb/ft)
END, CORNER, OR PULL POST	2 1/2" DIAM.	Y	5.10
LINE OR BRACE POST	2" DIAM.	Z	1.85

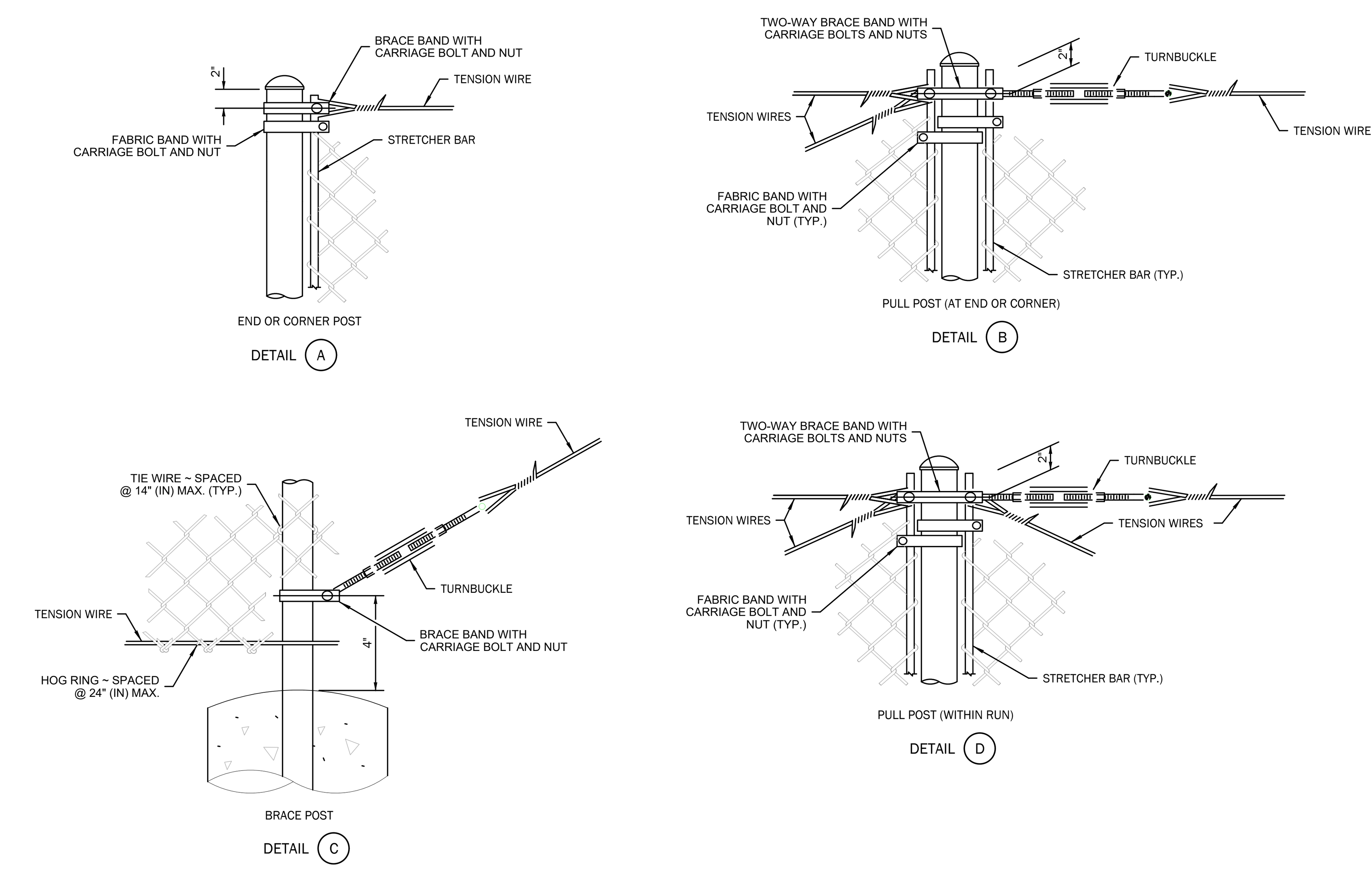


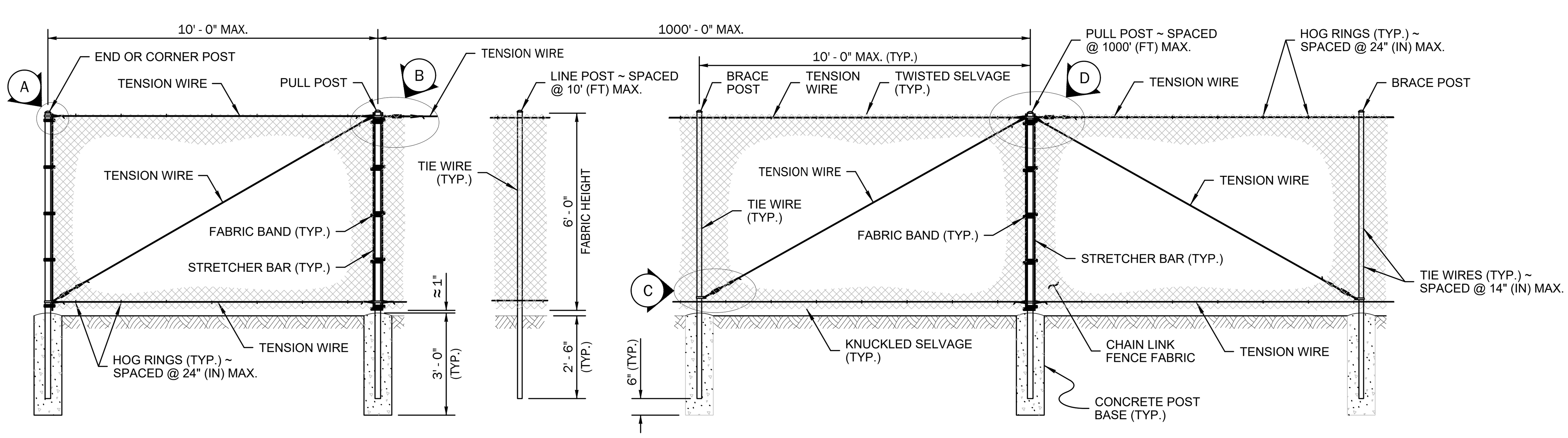
NOTES

1. All concrete post bases shall be 10" (in) minimum diameter.
2. Along the top and bottom, using Hog Rings, fasten the Chain Link Fence Fabric to the Tension Wire within the limits of the first full fabric weave.
3. Details are illustrative and shall not limit hardware design or post selection of any particular fence type.
4. Fencing shall be used for security and boundary delineation only.



METHOD OF FASTENING STRETCHER BAR TO POST





CHAIN LINK FENCE TYPE 3 3 / C-05
NTS

FENCE TYPE 3 CONNECTION DETAILS 4 / C-05
NTS

ERIC SCHELLENGER
STATE OF WASHINGTON
56315
REGISTERED PROFESSIONAL ENGINEER
08/17/2023

REV.	DESCRIPTION	DATE	SEA	APPR.
1	RECORD DRAWINGS	8/17/2023	ECS	
0	ISSUED FOR CONSTRUCTION	11/18/2022	SEA	

REVISED BY: -
DRAWN BY: CMV
DESIGNED BY: ECS
PROJECT NUMBER: 150074
REVISION: 1
DATE: 8/17/2023

Aspect CONSULTING

FENCE AND SIGNAGE DETAILS
CLEANUP ACTION CONSTRUCTION PLANS
SHELTON C STREET LANDFILL
SHELTON, WASHINGTON

SHEET REFERENCE NUMBER:
C-05
SHEET 6 OF 6

APPENDIX C

Geotextile Manufacturer Specifications

2007 Westport Rd
PO Box 600
Aberdeen, WA 98520

Brumfield CONSTRUCTION, INC.

Phone (360) 268-9231
Fax (360) 268-1454
Licensed and Bonded
BRUMF-CI-114-K4

Date: 12/15/2022

Submittal – Transmittal

To: City of Shelton - Public Works Dept.
Address: 525 West Cota, Shelton, WA 98584
Attn: Sam Adlington

Transmittal No. : 08

Project: C Street Landfill Cleanup Construction
Owner: City of Shelton - Public Works Dept.

Project No. :
Location: Shelton, WA

Previous Transmittal No. (If Resubmitted)

Use One Form Per Item Submitted

Qty	Spec. Paragraph No.	Spec Page No.	Item Description and Use	Manufacturer	Dwg. No.(s)	Approval Status Engineer
1	2.5		WSF 200 Geotextile	AFC West		

By this submittal, the Contractor represents that they have determined and verified all field measures, field construction criteria, materials, catalog numbers and similar data, or will do so and that they have checked and coordinated each submittal with the project requirements and the Contract Documents. Deviations are noted below.

Comments:

Contractor: Brumfield Construction, Inc.

Signature

Engineer Use Only

Enclosed are _____ copies of the above item. Approval status as noted above is in accordance with the following legend:

- ☐ No Exceptions Taken
- ☐ Make Corrections Noted
- ☐ Revise and Resubmit
- ☐ Submit Specified Item
- ☐ Rejected
- ☐ See Attached Review Comment Sheet Dated

By:
CC:

ACF West Inc. is a D.B.A. name for Northwest Geosynthetics Inc.
8951 SE 76th Drive, Portland, OR 97206 (503) 771-5115, (800) 878-5115, (503)771-1161 fax

Product Data Sheet

WSF 200 (ACF 200) Woven Geotextile

WSF 200 is a woven slit film geotextile, and will meet the following physical properties when tested in accordance with the methods listed below. The individual slit films are woven together in such a manner as to provide dimensional stability relative to each other. The construction of the geotextile makes WSF 200 ideal for soil separation and stabilization. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

WSF 200 Woven Geotextile conforms to the following physical properties:

Property	Test Method	English (MARV)[1]
Weight (Typical)	ASTM D-5261	4.0 oz./SY
Grab Tensile Strength	ASTM D-4632	200 lbs
CBR Puncture	ASTM D-6241	700 lbs
Trapezoidal Tear	ASTM D-4533	80 lbs
UV Resistance	ASTM D-4355	80%
Apparent Opening Size (AOS)[2]	ASTM D-4751	50 US Std. Sieve
Permittivity	ASTM D-4491	0.05 sec^{-1}
Roll Sizes		12.5' x 432' 15' x 360' 17.5'x 309'

1) All values listed are Minimum Average Roll Value (MARV) unless otherwise noted, calculated as the typical minus two standard deviations. Statistically, it yields 97.7% degree of confidence that any sample taken during quality assurance testing will exceed the value reported.
2) Values for Apparent Opening size are Maximum Average Roll Values (MaxARV), typical value plus two standard deviations.

Note: WSF 200 fabric is manufactured and imported for ACF West Inc. by Gia Loi Joint Stock Company. Phuoc Thai Hamlet, Tahi Hoa Tan Uyen District. Binh Duon Province, Vietnam. ACF 200 is a trade name of ACF West Inc. and any use of this name without the expressed written consent of ACF West Inc. is strictly prohibited. The property values listed above are effective 11-1-2010 and subject to change without notice.

2007 Westport Rd
PO Box 600
Aberdeen, WA 98520

Brumfield CONSTRUCTION, INC.

Phone (360) 268-9231
Fax (360) 268-1454
Licensed and Bonded
BRUMF-CI-114-K4

Date: 12/16/2022

Submittal – Transmittal

To: City of Shelton - Public Works Dept.
Address: 525 West Cota, Shelton, WA 98584
Attn: Sam Adlington

Transmittal No. : 09

Project: C Street Landfill Cleanup Construction
Owner: City of Shelton - Public Works Dept.

Project No. :
Location: Shelton, WA

Previous Transmittal No. (If Resubmitted)

Use One Form Per Item Submitted

Qty	Spec. Paragraph No.	Spec Page No.	Item Description and Use	Manufacturer	Dwg. No.(s)	Approval Status Engineer
1	2.4		WSF 315 Geotextile	AFC West		

By this submittal, the Contractor represents that they have determined and verified all field measures, field construction criteria, materials, catalog numbers and similar data, or will do so and that they have checked and coordinated each submittal with the project requirements and the Contract Documents. Deviations are noted below.

Comments:

Contractor: Brumfield Construction, Inc.

Signature

Engineer Use Only

Enclosed are _____ copies of the above item. Approval status as noted above is in accordance with the following legend:

- ☐ No Exceptions Taken
- ☐ Make Corrections Noted
- ☐ Revise and Resubmit
- ☐ Submit Specified Item
- ☐ Rejected
- ☐ See Attached Review Comment Sheet Dated

By:
CC:

ACF WEST INC.
GEOSYNTHETICS
Products | Service | Solutions

ACF West Inc. is a D.B.A. name for Northwest Geosynthetics Inc.

8951 SE 76th Drive Portland, OR 97206 503-771-5115 800-878-5115 Fax 503-771-1161

Product Data Sheet

WSF 315 Woven Geotextile

WSF 315 is a woven slit film geotextile, and will meet the following physical properties when tested in accordance with the methods listed below. The individual slit films are woven together in such a manner as to provide dimensional stability relative to each other. The construction of the geotextile makes WSF 315 ideal for soil separation and stabilization. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

WSF 315 woven Geotextile conforms to the following physical properties:

Property	Test Method	English (MARV)[1]
Grab Tensile	ASTM D-4632 (MC/CD)	315 lbs / 315 lbs
Grab Elongation	ASTM D-4632 (MC/CD)	15%
UV Resistance	ASTM D-4355	>80%
Trapezoidal Tear	ASTM D-4533 (MC/CD)	122 lbs
CBR Puncture	ASTM D-6241	1100 lbs
Apparent Opening Size (AOS)[2]	ASTM D-4751	40 US Std. Sieve
Permittivity	ASTM D-4491	0.10 Sec^{-1}
Roll Sizes		12.5' x 360' 17.5'x 258'

1. All values listed are Minimum Average Roll Value (MARV) unless otherwise noted, calculated as the typical minus two standard deviations Statistically, it yields 97.7% degree of confidence that any sample taken during quality assurance testing will exceed the value reported.
2. Values for Apparent Opening size are Maximum Average Roll Value (MaxARV), typical value plus two standard deviations.
3. AASHTO M288 Separation Class I Compliant.

Note: WSF 315 fabric is manufactured and imported for ACF West Inc. by Gia Loi Joint Stock Company. Phuoc Thai Hamlet, Tahi Hoa Tan Uyen District. Binh Duon Province, Vietnam. WSF 315 is a trade name of ACF West Inc. and any use of this name without the expressed written consent of ACF West Inc. is strictly prohibited. The property values listed above are effective 02-1-2014 and subject to change without notice.

APPENDIX D

Laboratory Reports for Chemical and Physical Quality of Imported Material

2007 Westport Rd
PO Box 600
Aberdeen, WA 98520

Brumfield CONSTRUCTION, INC.

Phone (360) 268-9231
Fax (360) 268-1454
Licensed and Bonded
BRUMF-CI-114-K4

Date: 02/16/2023

Submittal – Transmittal

To: City of Shelton - Public Works Dept.
Address: 525 West Cota, Shelton, WA 98584
Attn: Eric Schellenger

Transmittal No. : 12

Project: C Street Landfill Cleanup Construction
Owner: City of Shelton - Public Works Dept.

Project No. :
Location: Shelton, WA

Previous Transmittal No. (If Resubmitted)

Use One Form Per Item Submitted

Qty	Spec. Paragraph No.	Spec Page No.	Item Description and Use	Manufacturer	Dwg. No.(s)	Approval Status Engineer
1	2.4		Soil Cap Construction - Imported Fill Chemical Quality Information	Libby Environmental		

By this submittal, the Contractor represents that they have determined and verified all field measures, field construction criteria, materials, catalog numbers and similar data, or will do so and that they have checked and coordinated each submittal with the project requirements and the Contract Documents. Deviations are noted below.

Comments:

Contractor: Brumfield Construction, Inc.

Signature

Engineer Use Only

Enclosed are _____ copies of the above item. Approval status as noted above is in accordance with the following legend:

- ☐ No Exceptions Taken
- ☐ Make Corrections Noted
- ☐ Revise and Resubmit
- ☐ Submit Specified Item
- ☐ Rejected
- ☐ See Attached Review Comment Sheet Dated

By:
CC:

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

February 15, 2023

Josh Franzke
Brumfield Construction, Inc.
2007 Westport Rd
Aberdeen, WA 98520

Dear Josh Frankze:

Please find enclosed the analytical data report for the Delphi Quarry project located in Delphi, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 02/06/23 Page: 1 of 1

Client: BRUMFIELD CONSTRUCTION INC
Project Manager: JOSH FRANZKE
Address: 2007 WESTPORT RD
Project Name: DELPHI QUARRY
City: ABERDEEN State: WA Zip: 98520
Location: City, State: DELPHI, WA
Phone: 360-268-9231 Fax:
Collector: GAGE HARSHMAN Date of Collection: 02/06/23
Client Project #
Email: JOSH@BRUMFIELD.COM

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	cPAH 8270	PAH 8270 + Naphths	Semi Vol 8270			Field Notes
1	Soil 1	—	11:00AM	Soil	Jar			X			X		X			X				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
GAGE HARSHMAN	02/06/23 4:23 PM		2/6/23 1625
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:

TAT: 24HR 48HR (5-DAY)

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI QUARRY PROJECT
Brumfield Construction Inc
Delphi, Washington
Libby Project # L23B021

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	2/9/2023	74	nd
Soil 1	2/9/2023	92	nd
Practical Quantitation Limit			10

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 41% TO 142%

ANALYSES PERFORMED BY: Alex Randolph

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI QUARRY PROJECT
Brumfield Construction Inc
Delphi, Washington
Libby Project # L23B021

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	2/7/2023	87	nd	nd
Laboratory Control Sample	2/7/2023	99	99%	n/a
Soil 1	2/7/2023	91	nd	nd
Soil 1 Dup	2/7/2023	90	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Lucy Owens

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI QUARRY PROJECT
Brumfield Construction Inc
Delphi, Washington
Libby Project # L23B021

Analyses of Total Metals in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Arsenic (mg/kg)
Method Blank	2/9/2023	nd	nd	nd	nd
Soil 1	2/9/2023	nd	nd	27	9.4
Practical Quantitation Limit		5.0	1.0	5.0	5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Randolph Kraus

QA/QC for Total Metals in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)	Cadmium (% Recovery)	Chromium (% Recovery)	Arsenic (% Recovery)
LCS	2/9/2023	102%	102%	115%	113%
L23B019-01 MS	2/9/2023	93%	114%	109%	123%
L23B019-01 MSD	2/9/2023	83%	101%	94%	110%
RPD	2/9/2023	11%	12%	15%	11%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Randolph Kraus

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI QUARRY PROJECT
Brumfield Construction Inc
Delphi, Washington
Libby Project # L23B021

Analyses of Total Mercury in Soil by EPA Method 7471

Sample Number	Date Analyzed	Mercury (mg/kg)
Method Blank	2/9/2023	nd
Soil 1	2/9/2023	nd
Practical Quantitation Limit		0.5

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Kory Dixon

QA/QC for Total Mercury by EPA Method 7471

Sample Number	Date Analyzed	Mercury (% Recovery)
LCS	2/9/2023	89%
L23B019-01 MS	2/9/2023	87%
L23B019-01 MSD	2/9/2023	89%
RPD	2/9/2023	2%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Kory Dixon

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI QUARRY PROJECT
Brumfield Construction Inc
Libby Project # L23B021
Date Received 2/6/23 16:25

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☐ Yes	☑ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☐ Yes	☑ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☐ Yes	☐ No	☑ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☐ No	☑ N/A
6. Was an attempt made to cool the samples?	☐ Yes	☑ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	N/A °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	16.8 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☐ Yes	☐ No	☑ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☑ Yes	☐ No	☑ N/A

Person Notified: Josh — Date: 2/6/2023
By Whom: JA — Via: Email
Regarding: Analyses

19. Comments.
Lab techician filled in COC per project requirements and labeled samples accordingly.
Clarified analyses with Josh.
Client Sampled from 5 gal bucket into jars and VOAs upon arrival at the lab.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Libby Environmental
Sherry Chilcutt
3322 South Bay Road NE
Olympia, WA 98506

RE: Delphi Quarry
Work Order Number: 2302142

February 15, 2023

Attention Sherry Chilcutt:

Fremont Analytical, Inc. received 1 sample(s) on 2/8/2023 for the analyses presented in the following report.

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/15/2023*

CLIENT: Libby Environmental
Project: Delphi Quarry
Work Order: 2302142

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2302142-001	Soil 1	02/06/2023 11:00 AM	02/08/2023 10:22 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2302142**
Date: **2/15/2023**

CLIENT: Libby Environmental
Project: Delphi Quarry

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2302142**
Date Reported: **2/15/2023**

Client: Libby Environmental
Collection Date: 2/6/2023 11:00:00 AM
Project: Delphi Quarry
Lab ID: 2302142-001
Matrix: Soil
Client Sample ID: **Soil 1**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 39416		Analyst: CB
Naphthalene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
2-Methylnaphthalene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
1-Methylnaphthalene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
Acenaphthylene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
Acenaphthene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
Fluorene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
Phenanthrene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
Anthracene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
Fluoranthene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
Pyrene	ND	38.1		µg/Kg	1	2/14/2023 5:28:39 PM
Benz(a)anthracene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
Chrysene	ND	19.0		µg/Kg	1	2/14/2023 5:28:39 PM
Benzo(b)fluoranthene	ND	23.8		µg/Kg	1	2/14/2023 5:28:39 PM
Benzo(k)fluoranthene	ND	23.8	*	µg/Kg	1	2/14/2023 5:28:39 PM
Benzo(a)pyrene	ND	28.6		µg/Kg	1	2/14/2023 5:28:39 PM
Indeno(1,2,3-cd)pyrene	ND	38.1		µg/Kg	1	2/14/2023 5:28:39 PM
Dibenz(a,h)anthracene	ND	47.6		µg/Kg	1	2/14/2023 5:28:39 PM
Benzo(g,h,i)perylene	ND	47.6		µg/Kg	1	2/14/2023 5:28:39 PM
Surr: 2-Fluorobiphenyl	65.4	34.4 - 132		%Rec	1	2/14/2023 5:28:39 PM
Surr: Terphenyl-d14 (surr)	61.0	32.8 - 147		%Rec	1	2/14/2023 5:28:39 PM

NOTES:
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Work Order: 2302142
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-39416**	SampType: **MBLK**	Units: **µg/Kg**	Prep Date: **2/13/2023**	RunNo: **81865**
Client ID: **MBLKS**	Batch ID: **39416**		Analysis Date: **2/14/2023**	SeqNo: **1697481**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	20.0									
2-Methylnaphthalene	ND	20.0									
1-Methylnaphthalene	ND	20.0									
Acenaphthene	ND	20.0									
Acenaphthylene	ND	20.0									
Phenanthrene	ND	20.0									
Fluorene	ND	20.0									
Anthracene	ND	20.0									
Fluoranthene	ND	20.0									
Pyrene	ND	40.0									
Benz(a)anthracene	ND	20.0									
Chrysene	ND	20.0									
Benzo(b)fluoranthene	ND	25.0									
Benzo(k)fluoranthene	ND	25.0									*
Benzo(a)pyrene	ND	30.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	50.0									
Benzo(g,h,i)perylene	ND	50.0									
Surr: 2,4,6-Tribromophenol	1,420		2,000		70.9	54.6	144				
Surr: 2-Fluorobiphenyl	828		1,000		82.8	34.4	132				
Surr: Terphenyl-d14 (surr)	789		1,000		78.9	32.8	147				

NOTES:
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Sample ID: **LCS-39416**	SampType: **LCS**	Units: **µg/Kg**	Prep Date: **2/13/2023**	RunNo: **81865**
Client ID: **LCSS**	Batch ID: **39416**		Analysis Date: **2/14/2023**	SeqNo: **1697482**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,390	20.0	2,000	0	69.4	64.3	115				
2-Methylnaphthalene	1,350	20.0	2,000	0	67.3	58.9	122				
1-Methylnaphthalene	1,380	20.0	2,000	0	68.9	57.4	122				
Acenaphthene	1,360	20.0	2,000	0	68.0	61.1	119				

Work Order: 2302142
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-39416** SampType: **LCS** Units: **µg/Kg** Prep Date: **2/13/2023** RunNo: **81865**
Client ID: **LCSS** Batch ID: **39416** Analysis Date: **2/14/2023** SeqNo: **1697482**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	1,390	20.0	2,000	0	69.4	52.9	120				
Phenanthrene	1,290	20.0	2,000	0	64.7	60	118				
Fluorene	1,360	20.0	2,000	0	68.0	63.6	120				
Anthracene	1,410	20.0	2,000	0	70.4	59.5	119				
Fluoranthene	1,290	20.0	2,000	0	64.7	62.3	120				
Pyrene	1,310	40.0	2,000	0	65.6	61.1	120				
Benz(a)anthracene	1,370	20.0	2,000	0	68.4	61.5	123				
Chrysene	1,250	20.0	2,000	0	62.4	58.6	120				
Benzo(b)fluoranthene	1,260	25.0	2,000	0	63.2	62.1	124				
Benzo(k)fluoranthene	1,200	25.0	2,000	0	59.8	60.3	116				S
Benzo(a)pyrene	1,320	30.0	2,000	0	66.1	51.6	115				
Indeno(1,2,3-cd)pyrene	1,350	40.0	2,000	0	67.6	53.8	127				
Dibenz(a,h)anthracene	1,340	50.0	2,000	0	67.2	53.3	127				
Benzo(g,h,i)perylene	1,320	50.0	2,000	0	65.8	48.6	122				
Surr: 2,4,6-Tribromophenol	1,670		2,000		83.4	54.6	144				
Surr: 2-Fluorobiphenyl	830		1,000		83.0	34.4	132				
Surr: Terphenyl-d14 (surr)	837		1,000		83.7	32.8	147				

NOTES:
S - Outlying spike recovery observed (high bias). Detections will be qualified with a *.

Sample ID: **2302203-008AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **2/13/2023** RunNo: **81865**
Client ID: **BATCH** Batch ID: **39416** Analysis Date: **2/15/2023** SeqNo: **1697498**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,390	24.2	2,419	0	57.3	55.7	105				
2-Methylnaphthalene	1,380	24.2	2,419	0	57.1	56.6	103				
1-Methylnaphthalene	1,390	24.2	2,419	0	57.6	56.1	101				
Acenaphthene	1,380	24.2	2,419	0	57.0	55.9	107				
Acenaphthylene	1,380	24.2	2,419	0	56.9	53.8	100				
Phenanthrene	1,310	24.2	2,419	0	54.2	49.1	109				
Fluorene	1,370	24.2	2,419	0	56.7	55.7	107				
Anthracene	1,300	24.2	2,419	0	53.7	52.4	107				

Work Order: 2302142
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **2302203-008AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **2/13/2023** RunNo: **81865**
Client ID: **BATCH** Batch ID: **39416** Analysis Date: **2/15/2023** SeqNo: **1697498**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoranthene	1,320	24.2	2,419	0	54.6	53.1	110				
Pyrene	1,340	48.4	2,419	0	55.6	52.5	109				
Benz(a)anthracene	1,380	24.2	2,419	0	57.1	53.4	112				
Chrysene	1,290	24.2	2,419	0	53.5	52	105				
Benzo(b)fluoranthene	1,310	30.2	2,419	0	54.0	51.3	119				
Benzo(k)fluoranthene	1,250	30.2	2,419	0	51.7	50.3	108				
Benzo(a)pyrene	1,400	36.3	2,419	0	57.7	48.5	106				
Indeno(1,2,3-cd)pyrene	1,400	48.4	2,419	0	58.0	42.1	113				
Dibenz(a,h)anthracene	1,420	60.5	2,419	0	58.9	40.4	114				
Benzo(g,h,i)perylene	1,350	60.5	2,419	0	55.9	34.7	105				
Surr: 2,4,6-Tribromophenol	1,720		2,419		71.2	54.6	144				
Surr: 2-Fluorobiphenyl	833		1,209		68.8	34.4	132				
Surr: Terphenyl-d14 (surr)	785		1,209		64.9	32.8	147				

Sample ID: **2302203-008AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **2/13/2023** RunNo: **81865**
Client ID: **BATCH** Batch ID: **39416** Analysis Date: **2/15/2023** SeqNo: **1697499**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,420	23.9	2,385	0	59.4	55.7	105	1,386	2.18	30	
2-Methylnaphthalene	1,390	23.9	2,385	0	58.3	56.6	103	1,381	0.635	30	
1-Methylnaphthalene	1,420	23.9	2,385	0	59.4	56.1	101	1,394	1.62	30	
Acenaphthene	1,390	23.9	2,385	0	58.3	55.9	107	1,378	0.898	30	
Acenaphthylene	1,390	23.9	2,385	0	58.3	53.8	100	1,376	1.07	30	
Phenanthrene	1,300	23.9	2,385	0	54.7	49.1	109	1,311	0.492	30	
Fluorene	1,380	23.9	2,385	0	57.9	55.7	107	1,371	0.664	30	
Anthracene	1,310	23.9	2,385	0	54.9	52.4	107	1,299	0.843	30	
Fluoranthene	1,340	23.9	2,385	0	56.0	53.1	110	1,322	1.10	30	
Pyrene	1,350	47.7	2,385	0	56.6	52.5	109	1,344	0.355	30	
Benz(a)anthracene	1,390	23.9	2,385	0	58.1	53.4	112	1,381	0.435	30	
Chrysene	1,320	23.9	2,385	0	55.3	52	105	1,294	1.84	30	
Benzo(b)fluoranthene	1,320	29.8	2,385	0	55.3	51.3	119	1,306	1.03	30	

Work Order: 2302142
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **2302203-008AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **2/13/2023** RunNo: **81865**
Client ID: **BATCH** Batch ID: **39416** Analysis Date: **2/15/2023** SeqNo: **1697499**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	1,270	29.8	2,385	0	53.3	50.3	108	1,252	1.54	30	
Benzo(a)pyrene	1,410	35.8	2,385	0	59.0	48.5	106	1,395	0.910	30	
Indeno(1,2,3-cd)pyrene	1,420	47.7	2,385	0	59.4	42.1	113	1,402	1.07	30	
Dibenz(a,h)anthracene	1,430	59.6	2,385	0	59.8	40.4	114	1,424	0.224	30	
Benzo(g,h,i)perylene	1,360	59.6	2,385	0	57.1	34.7	105	1,352	0.806	30	
Surr: 2,4,6-Tribromophenol	1,700		2,385		71.2	54.6	144		0		
Surr: 2-Fluorobiphenyl	834		1,193		69.9	34.4	132		0		
Surr: Terphenyl-d14 (surr)	776		1,193		65.1	32.8	147		0		

Sample Log-In Check List

Client Name:	LIBBY	Work Order Number:	2302142
Logged by:	Clare Griggs	Date Received:	2/8/2023 10:22:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	UPS				

Log In

3.	Coolers are present?	Yes	☑	No ☐	NA	☐
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No ☐	Not Present	☑
6.	Was an attempt made to cool the samples?	Yes	☑	No ☐	NA	☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No ☐	NA	☐
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No ☐	NA	☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

SUBCONTRACT ORDER L23B021

2302142

Sending Laboratory:

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506
Phone: 360-352-2110
Fax: 360-352-4154

Project Manager: Sherry Chilcutt
LibbyEnv@gmail.com

Subcontracted Laboratory:

Fremont Analytical, Inc.
3600 Fremont Ave N
Seattle, WA 98103
Phone: (206) 352-3790
Fax:

Requested Turnaround (TAT) STD

Project: Delphi Quarry

Analysis	Comments
Client Sample ID: Soil 1 ***Soil Sampled: 02/06/2023 11:00***	Lab ID: L23B021-01
8270 PAH	+ Naphths SIM
Containers Supplied:	

Released By — Date 2.7.23

Received By — Date 02/8/23 10:22

2007 Westport Rd
PO Box 600
Aberdeen, WA 98520

Brumfield CONSTRUCTION, INC.

Phone (360) 268-9231
Fax (360) 268-1454
Licensed and Bonded
BRUMF-CI-114-K4

Date: 03/09/2023

Submittal – Transmittal

To: Aspect Consulting
Address: 50414th Ave SE Suite 200, Olympia, WA 985
Attn: Eric Sschellenger

Transmittal No. : 13

Project: C Street Landfill Cleanup Construction
Owner: City of Shelton

Project No. : 22-244-80
Location: Shelton, WA

Previous Transmittal No. (If Resubmitted)

Use One Form Per Item Submitted

Qty	Spec. Paragraph No.	Spec Page No.	Item Description and Use	Manufacturer	Dwg. No.(s)	Approval Status Engineer
1	2.4		Soil Cap Construction - Im	Libby Environme		

By this submittal, the Contractor represents that they have determined and verified all field measures, field construction criteria, materials, catalog numbers and similar data, or will do so and that they have checked and coordinated each submittal with the project requirements and the Contract Documents. Deviations are noted below.

Comments:

Contractor: Brumfield Construction, Inc.

Signature Josh Franzke

Engineer Use Only

Enclosed are _____ copies of the above item. Approval status as noted above is in accordance with the following legend:

- ☐ No Exceptions Taken
- ☐ Make Corrections Noted
- ☐ Revise and Resubmit
- ☐ Submit Specified Item
- ☐ Rejected
- ☐ See Attached Review Comment Sheet Dated

By: _____
CC: _____

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

March 8, 2023

Josh Franzke
Brumfield Construction
2007 Westport Road
Aberdeen, WA 98520

Dear Josh Franzke:

Please find enclosed the analytical data report for the Delphi Quarry project located in Olympia, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 2-28-23 Page: of

Client: BRUMFIELD CONSTRUCTION
Project Manager: JOSH FRANZKE
Address: 2007 WESTPORT ROAD
Project Name: DELPHI QUARRY
City: ABERDEEN State: WA Zip: 98520
Location: DELPHI RD SW City, State: OLYMPIA, WA
Phone: 360-915-2438 Fax:
Collector: GAGE HARSHMAN Date of Collection: 2-28-23
Client Project #
Email: JOSH@BRUMFIELDINC.COM

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270 + Naphthalene	Semi Vol 8270			Field Notes
1 #2		1200	Soil	VOA			X			X		X			X				
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
	2-28-23/4:46		2-28-23/1650
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:
Analytes grabbed from previous project, L23B021

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI QUARRY PROJECT
Brumfield Construction
Olympia, Washington
Libby Project # L23C001

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	3/1/2023	98	nd
#2	3/1/2023	96	nd
Practical Quantitation Limit			10

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 41% TO 142%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI QUARRY PROJECT
Brumfield Construction
Olympia, Washington
Libby Project # L23C001

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	3/3/2023	102	nd	nd
LCS	3/3/2023	114	125%	n/a
#2	3/3/2023	99	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Kristin Hintz

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI QUARRY PROJECT
Brumfield Construction
Olympia, Washington
Libby Project # L23C001

Analyses of Total Mercury in Soil by EPA Method 7471

Sample Number	Date Analyzed	Mercury (mg/kg)
Method Blank	3/2/2023	nd
#2	3/2/2023	nd
Practical Quantitation Limit		0.5

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Kory Dixon

QA/QC for Total Mercury by EPA Method 7471

Sample Number	Date Analyzed	Mercury (% Recovery)
LCS	3/2/2023	81%
L23B124-01 MS	3/2/2023	82%
L23B124-01 MSD	3/2/2023	85%
RPD	3/2/2023	4%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Kory Dixon

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI QUARRY PROJECT
Brumfield Construction
Libby Project # L23C001
Date Received 2/28/23 16:50

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☐ Yes	☑ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☐ Yes	☑ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☐ Yes	☐ No	☑ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☐ No	☑ N/A
6. Was an attempt made to cool the samples?	☐ Yes	☑ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	n/a °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	13.1 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☑ Yes ☐ No ☐ N/A

Person Notified: Brumfield Construction Employee Date: 2/28/2023

By Whom: Kory Dixon Via: In person

Regarding: No analyses indicated on COC

19. Comments. Client requested same analyses to be performed as previously received project.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Libby Environmental
Sherry Chilcutt
3322 South Bay Road NE
Olympia, WA 98506

RE: Delphi Quarry
Work Order Number: 2303024

March 07, 2023

Attention Sherry Chilcutt:

Fremont Analytical, Inc. received 1 sample(s) on 3/2/2023 for the analyses presented in the following report.

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *03/07/2023*

CLIENT: Libby Environmental
Project: Delphi Quarry
Work Order: 2303024

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2303024-001	#2	02/28/2023 12:00 PM	03/02/2023 9:44 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2303024**
Date: **3/7/2023**

CLIENT: Libby Environmental
Project: Delphi Quarry

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2303024**
Date Reported: **3/7/2023**

Client: Libby Environmental
Project: Delphi Quarry
Lab ID: 2303024-001
Client Sample ID: **#2**

Collection Date: 2/28/2023 12:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 39601		Analyst: CB
Naphthalene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
2-Methylnaphthalene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
1-Methylnaphthalene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Acenaphthylene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Acenaphthene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Fluorene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Phenanthrene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Anthracene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Fluoranthene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Pyrene	ND	48.1		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Benz(a)anthracene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Chrysene	ND	24.0		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Benzo(b)fluoranthene	ND	30.1		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Benzo(k)fluoranthene	ND	30.1		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Benzo(a)pyrene	ND	36.1		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Indeno(1,2,3-cd)pyrene	ND	48.1		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Dibenz(a,h)anthracene	ND	60.1		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Benzo(g,h,i)perylene	ND	60.1		µg/Kg-dry	1	3/4/2023 1:45:42 AM
Surr: 2-Fluorobiphenyl	74.7	34.4 - 132		%Rec	1	3/4/2023 1:45:42 AM
Surr: Terphenyl-d14 (surr)	73.9	32.8 - 147		%Rec	1	3/4/2023 1:45:42 AM
Total Metals by EPA Method 6020B				Batch ID: 39599		Analyst: SLL
Arsenic	1.15	0.239		mg/Kg-dry	1	3/3/2023 2:48:00 PM
Cadmium	0.0507	0.0191		mg/Kg-dry	1	3/3/2023 2:48:00 PM
Chromium	25.9	0.239		mg/Kg-dry	1	3/3/2023 2:48:00 PM
Lead	1.54	0.957		mg/Kg-dry	1	3/3/2023 2:48:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R82183		Analyst: AS
Percent Moisture	20.9			wt%	1	3/3/2023 8:23:50 AM

Work Order: 2303024
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **MB-39599**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **3/3/2023**	RunNo: **82198**
Client ID: **MBLKS**	Batch ID: **39599**		Analysis Date: **3/3/2023**	SeqNo: **1707107**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.250									
Cadmium	ND	0.0200									
Chromium	ND	0.250									
Lead	ND	1.00									

Sample ID: **LCS-39599**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **3/3/2023**	RunNo: **82198**
Client ID: **LCSS**	Batch ID: **39599**		Analysis Date: **3/3/2023**	SeqNo: **1707108**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	39.3	0.200	40.00	0	98.4	80	120				
Cadmium	1.92	0.0160	2.000	0	95.9	80	120				
Chromium	40.3	0.200	40.00	0	101	80	120				
Lead	19.5	0.800	20.00	0	97.7	80	120				

Sample ID: **2303024-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **3/3/2023**	RunNo: **82198**
Client ID: **#2**	Batch ID: **39599**		Analysis Date: **3/3/2023**	SeqNo: **1707111**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	30.2	0.239	47.86	1.147	60.8	75	125				S
Cadmium	1.91	0.0191	2.393	0.05073	77.8	75	125				
Chromium	49.3	0.239	47.86	25.90	48.8	75	125				S
Lead	20.5	0.957	23.93	1.541	79.1	75	125				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2303024-001AMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **3/3/2023**	RunNo: **82198**
Client ID: **#2**	Batch ID: **39599**		Analysis Date: **3/3/2023**	SeqNo: **1707112**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	29.9	0.238	47.50	1.147	60.6	75	125	30.24	1.02	20	S
Cadmium	1.92	0.0190	2.375	0.05073	78.7	75	125	1.913	0.315	20	

Work Order: 2303024
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **2303024-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **3/3/2023** RunNo: **82198**
Client ID: **#2** Batch ID: **39599** Analysis Date: **3/3/2023** SeqNo: **1707112**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	48.6	0.238	47.50	25.90	47.8	75	125	49.27	1.35	20	S
Lead	22.3	0.950	23.75	1.541	87.5	75	125	20.47	8.65	20	

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2303024
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-39601** SampType: **MBLK** Units: **µg/Kg** Prep Date: **3/3/2023** RunNo: **82230**
Client ID: **MBLKS** Batch ID: **39601** Analysis Date: **3/3/2023** SeqNo: **1707855**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	20.0									
2-Methylnaphthalene	ND	20.0									
1-Methylnaphthalene	ND	20.0									
Acenaphthene	ND	20.0									
Acenaphthylene	ND	20.0									
Phenanthrene	ND	20.0									
Fluorene	ND	20.0									
Anthracene	ND	20.0									
Fluoranthene	ND	20.0									
Pyrene	ND	40.0									
Benz(a)anthracene	ND	20.0									
Chrysene	ND	20.0									
Benzo(b)fluoranthene	ND	25.0									
Benzo(k)fluoranthene	ND	25.0									
Benzo(a)pyrene	ND	30.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	50.0									
Benzo(g,h,i)perylene	ND	50.0									
Surr: 2-Fluorobiphenyl	798		1,000		79.8	34.4	132				
Surr: Terphenyl-d14 (surr)	810		1,000		81.0	32.8	147				

Sample ID: **LCS-39601** SampType: **LCS** Units: **µg/Kg** Prep Date: **3/3/2023** RunNo: **82230**
Client ID: **LCSS** Batch ID: **39601** Analysis Date: **3/3/2023** SeqNo: **1707856**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,860	20.0	2,000	0	92.8	64.3	115				
2-Methylnaphthalene	1,840	20.0	2,000	0	92.1	58.9	122				
1-Methylnaphthalene	1,840	20.0	2,000	0	91.9	57.4	122				
Acenaphthene	1,830	20.0	2,000	0	91.7	61.1	119				
Acenaphthylene	1,820	20.0	2,000	0	91.1	52.9	120				
Phenanthrene	1,840	20.0	2,000	0	92.1	60	118				

Work Order: 2303024
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-39601** SampType: **LCS** Units: **µg/Kg** Prep Date: **3/3/2023** RunNo: **82230**
Client ID: **LCSS** Batch ID: **39601** Analysis Date: **3/3/2023** SeqNo: **1707856**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluorene	1,870	20.0	2,000	0	93.6	63.6	120				
Anthracene	1,810	20.0	2,000	0	90.5	59.5	119				
Fluoranthene	1,860	20.0	2,000	0	92.8	62.3	120				
Pyrene	1,870	40.0	2,000	0	93.5	61.1	120				
Benz(a)anthracene	1,930	20.0	2,000	0	96.4	61.5	123				
Chrysene	1,790	20.0	2,000	0	89.3	58.6	120				
Benzo(b)fluoranthene	1,860	25.0	2,000	0	93.2	62.1	124				
Benzo(k)fluoranthene	1,820	25.0	2,000	0	90.8	60.3	116				
Benzo(a)pyrene	1,870	30.0	2,000	0	93.5	51.6	115				
Indeno(1,2,3-cd)pyrene	1,920	40.0	2,000	0	95.8	53.8	127				
Dibenz(a,h)anthracene	1,830	50.0	2,000	0	91.6	53.3	127				
Benzo(g,h,i)perylene	1,880	50.0	2,000	0	94.2	48.6	122				
Surr: 2-Fluorobiphenyl	770		1,000		77.0	34.4	132				
Surr: Terphenyl-d14 (surr)	809		1,000		80.9	32.8	147				

Sample ID: **2303025-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **3/3/2023** RunNo: **82230**
Client ID: **BATCH** Batch ID: **39601** Analysis Date: **3/3/2023** SeqNo: **1707858**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,760	21.6	2,163	0	81.5	55.7	105				
2-Methylnaphthalene	1,730	21.6	2,163	0	79.7	56.6	103				
1-Methylnaphthalene	1,720	21.6	2,163	0	79.4	56.1	101				
Acenaphthene	1,680	21.6	2,163	0	77.9	55.9	107				
Acenaphthylene	1,700	21.6	2,163	0	78.4	53.8	100				
Phenanthrene	1,720	21.6	2,163	0	79.6	49.1	109				
Fluorene	1,740	21.6	2,163	0	80.5	55.7	107				
Anthracene	1,680	21.6	2,163	0	77.5	52.4	107				
Fluoranthene	1,720	21.6	2,163	0	79.3	53.1	110				
Pyrene	1,720	43.3	2,163	0	79.7	52.5	109				
Benz(a)anthracene	1,780	21.6	2,163	0	82.3	53.4	112				
Chrysene	1,670	21.6	2,163	0	77.1	52	105				

Work Order: 2303024
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **2303025-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **3/3/2023** RunNo: **82230**
Client ID: **BATCH** Batch ID: **39601** Analysis Date: **3/3/2023** SeqNo: **1707858**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	1,750	27.0	2,163	0	81.0	51.3	119				
Benzo(k)fluoranthene	1,670	27.0	2,163	0	77.2	50.3	108				
Benzo(a)pyrene	1,750	32.4	2,163	0	80.8	48.5	106				
Indeno(1,2,3-cd)pyrene	1,860	43.3	2,163	26.14	84.8	42.1	113				
Dibenz(a,h)anthracene	1,880	54.1	2,163	31.40	85.5	40.4	114				
Benzo(g,h,i)perylene	1,830	54.1	2,163	0	84.6	34.7	105				
Surr: 2-Fluorobiphenyl	719		1,082		66.4	34.4	132				
Surr: Terphenyl-d14 (surr)	747		1,082		69.1	32.8	147				

Sample ID: **2303025-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **3/3/2023** RunNo: **82230**
Client ID: **BATCH** Batch ID: **39601** Analysis Date: **3/3/2023** SeqNo: **1707859**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,730	21.7	2,167	0	80.0	55.7	105	1,763	1.68	30	
2-Methylnaphthalene	1,720	21.7	2,167	0	79.5	56.6	103	1,725	0.0889	30	
1-Methylnaphthalene	1,730	21.7	2,167	0	79.7	56.1	101	1,717	0.661	30	
Acenaphthene	1,710	21.7	2,167	0	78.8	55.9	107	1,685	1.40	30	
Acenaphthylene	1,720	21.7	2,167	0	79.4	53.8	100	1,696	1.43	30	
Phenanthrene	1,750	21.7	2,167	0	80.6	49.1	109	1,721	1.46	30	
Fluorene	1,760	21.7	2,167	0	81.2	55.7	107	1,741	1.06	30	
Anthracene	1,720	21.7	2,167	0	79.4	52.4	107	1,677	2.56	30	
Fluoranthene	1,760	21.7	2,167	0	81.2	53.1	110	1,715	2.61	30	
Pyrene	1,780	43.3	2,167	0	82.3	52.5	109	1,724	3.41	30	
Benz(a)anthracene	1,830	21.7	2,167	0	84.4	53.4	112	1,780	2.68	30	
Chrysene	1,720	21.7	2,167	0	79.5	52	105	1,667	3.23	30	
Benzo(b)fluoranthene	1,840	27.1	2,167	0	84.8	51.3	119	1,752	4.70	30	
Benzo(k)fluoranthene	1,730	27.1	2,167	0	79.8	50.3	108	1,671	3.49	30	
Benzo(a)pyrene	1,820	32.5	2,167	0	83.8	48.5	106	1,748	3.77	30	
Indeno(1,2,3-cd)pyrene	1,940	43.3	2,167	26.14	88.5	42.1	113	1,860	4.44	30	
Dibenz(a,h)anthracene	2,000	54.2	2,167	31.40	90.9	40.4	114	1,881	6.23	30	
Benzo(g,h,i)perylene	1,880	54.2	2,167	0	86.7	34.7	105	1,830	2.58	30	

Work Order: 2303024
CLIENT: Libby Environmental
Project: Delphi Quarry

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **2303025-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **3/3/2023** RunNo: **82230**
Client ID: **BATCH** Batch ID: **39601** Analysis Date: **3/3/2023** SeqNo: **1707859**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	723		1,084		66.7	34.4	132		0		
Surr: Terphenyl-d14 (surr)	760		1,084		70.2	32.8	147		0		

Sample Log-In Check List

Client Name:	LIBBY	Work Order Number:	2303024
Logged by:	Clare Griggs	Date Received:	3/2/2023 9:44:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	Client				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☑	No	☐	Not Present ☐
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No	☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	3.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

2303024

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

SUBCONTRACT ORDER L23C001

Sending Laboratory:

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506
Phone: 360-352-2110
Fax: 360-352-4154

Project Manager: Sherry Chilcutt
LibbyEnv@gmail.com

Subcontracted Laboratory:

Fremont Analytical, Inc.
3600 Fremont Ave N
Seattle, WA 98103
Phone: (206) 352-3790
Fax:

Requested Turnaround (TAT) Std

Project: Delphi Quarry

Analysis	Comments
Client Sample ID: #2 ***Soil Sampled: 02/28/2023 12:00***	Lab ID: L23C001-01
8270 PAH Metals SUB MTCA 4	+Naphths Totals please
Containers Supplied:	

Released By _____ Date 3.1.23

Received By _____ Date 3/2/23

2007 Westport Rd
PO Box 600
Aberdeen, WA 98520

Brumfield CONSTRUCTION, INC.

Phone (360) 268-9231
Fax (360) 268-1454
Licensed and Bonded
BRUMF-CI-114-K4

Date: 06/06/2023

Submittal – Transmittal

To: City of Shelton - Public Works Dept.
Address: 525 West Cota, Shelton, WA 98584
Attn: Eric Schellenger

Transmittal No. : 25

Project: C Street Landfill Cleanup Construction
Owner: City of Shelton - Public Works Dept.

Project No. :
Location: Shelton, WA

Previous Transmittal No. (If Resubmitted)

Use One Form Per Item Submitted

Qty	Spec. Paragraph No.	Spec Page No.	Item Description and Use	Manufacturer	Dwg. No.(s)	Approval Status Engineer
1	2.4.2.1		Environmental Testing - Low Permeability Soil Layer	Libby Environmental		

By this submittal, the Contractor represents that they have determined and verified all field measures, field construction criteria, materials, catalog numbers and similar data, or will do so and that they have checked and coordinated each submittal with the project requirements and the Contract Documents. Deviations are noted below.

Comments:

Contractor: Brumfield Construction, Inc.

Signature

Engineer Use Only

Enclosed are _____ copies of the above item. Approval status as noted above is in accordance with the following legend:

- ☐ No Exceptions Taken
- ☐ Make Corrections Noted
- ☐ Revise and Resubmit
- ☐ Submit Specified Item
- ☐ Rejected
- ☐ See Attached Review Comment Sheet Dated

By:

CC:

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

Phone (360) 352-2110 • libbyenv@gmail.com

June 06, 2023

Josh Franzke
Brumfield Construction
2007 Westport Rd
Aberdeen, WA 98520

RE: Delphi Soil
Work Order Number: L23E107

Enclosed are the results of analyses for samples received by our laboratory on 5/26/2023.

Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please feel free to contact us. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry Chilcutt
Senior Chemist

Libby Environmental, Inc. — Chain of Custody Record

L23E107

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154
www.LibbyEnvironmental.com

Date: 5/26/23 Page: 1 of 2

Client: Brumfield Construction Inc
Address: 20007 WESTPORT RD
City: ABERDEEN State: WA Zip: 98520
Phone: 360-268-9231 Fax:
Client Project #

Project Manager: JOSH FRANZKE
Project Name: Delphi Soil
Location: Delphi Quarry City, State: Olympia, WA
Collector: GAGE Date of Collection: 5/26
Email: JOSH@Brumfieldinc.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270 + NAPH	Semi Vol 8270	Field Notes
1	D-1	2ft	6:15AM	SOIL				✓			✓				✓			
2	D-2		6:15 AM															
3	D-3		6:25AM															
4	D-4		6:40 AM															
5	D-5		7:00 AM															
6	D-6		7:10 AM															
7	D-7		7:30AM															
8	D-8		7:30 AM															
9	D-9		7:30 AM															
10	D-10		7:30 AM															
11	D-11		8:00 AM															
12	D-12		8:20AM															
13	D-13		8:20AM															
14	D-14		8:40 AM															
15	D-15		8:40AM															
16	D-16		8:50AM															
17	D-17		8:55AM															

Relinquished by: GAGE HARSHMAN	Date / Time 5/26/11:55	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time 5/26/23 1155
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

Chain of Custody Record

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

www.LibbyEnvironmental.com

Date: 5/26/23 Page: 2 of 2

Client: BRUMFIELD CONSTRUCTION INC
Project Manager: JOSH FRANZKE
Address: 2007 WESTPORT RD
Project Name: Delphi Soil
City: ABERDEEN State: WA Zip: 98520
Location: Delphi Quarry City, State: Olympia, WA
Phone: 360-268-9231 Fax:
Collector: GAGE Date of Collection: 5/26
Client Project #
Email JOSH@BRUMFIELDINC.COM

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270 + NAPH	Semi Vol 8270	Field Notes
1	D-18	2ft	9:00 AM	Soil				X			X				X			
2	D-19		9:00AM															
3	D-20		9:00AM															
4	D-21		9:05AM															
5	D-22		9:05AM															
6	D-23		9:05AM															
7	D-24		9:30 AM															
8	D-25		9:40 AM															
9	D-26		9:45AM															
10	D-27		9:50AM															
11	D-28		10:15AM															
12	D-29		10:25AM															
13	D-30		10:45AM															
14	D-31		11:05AM															
15	D-32		11:15AM															
16																		
17																		

Relinquished by:	Date / Time	Received by:	Date / Time
GAGE HARSHMAN	5/26/11:55	[signature]	5/26/23 1155
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - Originator

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Notes and Definitions

Item	Definition
A	Due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
F	High concentration of co-eluting target compounds interfering with surrogate recovery. Outlying surrogate recoveries expected.
I	Analyte with an internal standard that does not meet established acceptance criteria. Result should be considered and estimate.
S1	Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.
S3	Outlying spike recovery observed (high bias). Analyte will be qualified with a ** if detected.
RL	Reporting Limit
ND	Analyte NOT DETECTED at or above the reporting limit
DET	Analyte DETECTED at or above the reporting limit
Qual	Qualifier
	All results reported on an "as received" basis unless indicated by "Dry"
RPD	Relative Percent Difference
%REC	Percent Recovery
Parent	Sample that was matrix spiked or duplicated

Work Order Sample Summary

Lab ID	Sample	Matrix	Date Sampled	Date Received
L23E107-01	D-1	Soil	05/26/2023	05/26/2023
L23E107-02	D-2	Soil	05/26/2023	05/26/2023
L23E107-03	D-3	Soil	05/26/2023	05/26/2023
L23E107-04	D-4	Soil	05/26/2023	05/26/2023
L23E107-05	D-5	Soil	05/26/2023	05/26/2023
L23E107-06	D-6	Soil	05/26/2023	05/26/2023
L23E107-07	D-7	Soil	05/26/2023	05/26/2023
L23E107-08	D-8	Soil	05/26/2023	05/26/2023
L23E107-09	D-9	Soil	05/26/2023	05/26/2023
L23E107-10	D-10	Soil	05/26/2023	05/26/2023
L23E107-11	D-11	Soil	05/26/2023	05/26/2023
L23E107-12	D-12	Soil	05/26/2023	05/26/2023
L23E107-13	D-13	Soil	05/26/2023	05/26/2023
L23E107-14	D-14	Soil	05/26/2023	05/26/2023
L23E107-15	D-15	Soil	05/26/2023	05/26/2023
L23E107-16	D-16	Soil	05/26/2023	05/26/2023
L23E107-17	D-17	Soil	05/26/2023	05/26/2023
L23E107-18	D-18	Soil	05/26/2023	05/26/2023
L23E107-19	D-19	Soil	05/26/2023	05/26/2023
L23E107-20	D-20	Soil	05/26/2023	05/26/2023
L23E107-21	D-21	Soil	05/26/2023	05/26/2023
L23E107-22	D-22	Soil	05/26/2023	05/26/2023
L23E107-23	D-23	Soil	05/26/2023	05/26/2023
L23E107-24	D-24	Soil	05/26/2023	05/26/2023
L23E107-25	D-25	Soil	05/26/2023	05/26/2023
L23E107-26	D-26	Soil	05/26/2023	05/26/2023

Libby Environmental, Inc.

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Work Order Sample Summary

Lab ID	Sample	Matrix	Date Sampled	Date Received
L23E107-27	D-27	Soil	05/26/2023	05/26/2023
L23E107-28	D-28	Soil	05/26/2023	05/26/2023
L23E107-29	D-29	Soil	05/26/2023	05/26/2023
L23E107-30	D-30	Soil	05/26/2023	05/26/2023
L23E107-31	D-31	Soil	05/26/2023	05/26/2023
L23E107-32	D-32	Soil	05/26/2023	05/26/2023

Libby Environmental, Inc.

Brumfield Construction
2007 Westport Rd
Aberdeen, WA 98520

Project: Delphi Soil

Project Manager: Josh Franzke

City/State: Aberdeen, WA
Work Order: L23E107
Reported: 06/06/2023 14:55

Libby Environmental Sample Detection Summary

Analyte	Result	Qual	Units	RL	Method
Sample: **D-1**			Lab#: L23E107-01		
Chromium	9.0		mg/kg dry	6.0	7010
Sample: **D-2**			Lab#: L23E107-02		
Chromium	9.8		mg/kg dry	6.3	7010
Sample: **D-3**			Lab#: L23E107-03		
Chromium	11		mg/kg dry	6.1	7010
Sample: **D-4**			Lab#: L23E107-04		
Chromium	12		mg/kg dry	6.2	7010
Sample: **D-5**			Lab#: L23E107-05		
Chromium	15		mg/kg dry	6.1	7010
Sample: **D-6**			Lab#: L23E107-06		
Chromium	11		mg/kg dry	6.2	7010
Sample: **D-7**			Lab#: L23E107-07		
Chromium	18		mg/kg dry	6.2	7010
Sample: **D-8**			Lab#: L23E107-08		
Chromium	11		mg/kg dry	6.2	7010
Sample: **D-9**			Lab#: L23E107-09		
Chromium	11		mg/kg dry	6.1	7010
Sample: **D-10**			Lab#: L23E107-10		
Chromium	7.9		mg/kg dry	6.1	7010
Sample: **D-11**			Lab#: L23E107-11		
Chromium	9.9		mg/kg dry	6.2	7010
Sample: **D-12**			Lab#: L23E107-12		
Chromium	14		mg/kg dry	6.1	7010
Sample: **D-13**			Lab#: L23E107-13		
Chromium	11		mg/kg dry	6.3	7010
Sample: **D-14**			Lab#: L23E107-14		
Chromium	11		mg/kg dry	6.1	7010
Sample: **D-15**			Lab#: L23E107-15		
Chromium	12		mg/kg dry	6.2	7010

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Libby Environmental Sample Detection Summary (Continued)

Analyte	Result	Qual	Units	RL	Method
Sample: **D-16**			Lab#: L23E107-16		
Chromium	14		mg/kg dry	6.2	7010
Sample: **D-17**			Lab#: L23E107-17		
Chromium	13		mg/kg dry	6.1	7010
Sample: **D-18**			Lab#: L23E107-18		
Chromium	10		mg/kg dry	6.1	7010
Sample: **D-19**			Lab#: L23E107-19		
Chromium	11		mg/kg dry	6.1	7010
Sample: **D-20**			Lab#: L23E107-20		
Chromium	9.6		mg/kg dry	5.9	7010
Sample: **D-21**			Lab#: L23E107-21		
Chromium	16		mg/kg dry	6.1	7010
Sample: **D-22**			Lab#: L23E107-22		
Chromium	12		mg/kg dry	6.1	7010
Sample: **D-23**			Lab#: L23E107-23		
Chromium	12		mg/kg dry	6.0	7010
Sample: **D-24**			Lab#: L23E107-24		
Chromium	12		mg/kg dry	6.0	7010
Sample: **D-25**			Lab#: L23E107-25		
Chromium	11		mg/kg dry	6.0	7010
Sample: **D-26**			Lab#: L23E107-26		
Chromium	12		mg/kg dry	6.0	7010
Sample: **D-27**			Lab#: L23E107-27		
Chromium	10		mg/kg dry	6.0	7010
Sample: **D-28**			Lab#: L23E107-28		
Chromium	14		mg/kg dry	6.2	7010
Sample: **D-29**			Lab#: L23E107-29		
Chromium	9.6		mg/kg dry	6.0	7010
Sample: **D-30**			Lab#: L23E107-30		
Chromium	7.4		mg/kg dry	5.9	7010

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Libby Environmental Sample Detection Summary (Continued)

Analyte	Result	Qual	Units	RL	Method
Sample: **D-31**			Lab#: L23E107-31		
Chromium	7.5		mg/kg dry	6.1	7010
Sample: **D-32**			Lab#: L23E107-32		
Chromium	9.2		mg/kg dry	6.1	7010

Note: If no entry is made, then no target compounds were detected.

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results

Client Sample ID: D-1

Lab ID: L23E107-01 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/01/2023	JA
Surrogate: 2-FBP (SIM)	*96.0%*		*52-115*		*06/01/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*90.0%*		*40-116*		*06/01/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*100%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		60	mg/kg dry	05/31/2023	ES
Oil	ND		300	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*73.5%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.0	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	9.0		6.0	mg/kg dry	06/01/2023	KD
Lead	ND		6.0	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.60	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-1

Lab ID: L23E107-01 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	17		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-2

Lab ID: L23E107-02 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*96.0%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*90.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		18	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*100%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		63	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*99.0%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.3	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.3	mg/kg dry	06/01/2023	KD
Chromium	9.8		6.3	mg/kg dry	06/01/2023	KD
Lead	ND		6.3	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.63	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-2

Lab ID: L23E107-02 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	20		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-3

Lab ID: L23E107-03 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*98.0%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*92.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*98.6%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*104%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	11		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-3

Lab ID: L23E107-03 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-4

Lab ID: L23E107-04 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*104%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*100%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*99.0%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		62	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*93.7%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.2	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	12		6.2	mg/kg dry	06/01/2023	KD
Lead	ND		6.2	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.62	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-4

Lab ID: L23E107-04 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	19		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-5

Lab ID: L23E107-05 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*98.0%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*92.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*86.2%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/31/2023	ES
Oil	ND		300	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*102%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	15		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-5

Lab ID: L23E107-05 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-6

Lab ID: L23E107-06 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*100%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*94.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*106%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		62	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*74.1%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.2	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	11		6.2	mg/kg dry	06/01/2023	KD
Lead	ND		6.2	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.62	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-6

Lab ID: L23E107-06 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	19		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-7

Lab ID: L23E107-07 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*102%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*94.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*109%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		62	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*93.1%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.2	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	18		6.2	mg/kg dry	06/01/2023	KD
Lead	ND		6.2	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.62	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-7

Lab ID: L23E107-07 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	20		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-8

Lab ID: L23E107-08 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*102%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*94.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*96.2%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		62	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*102%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.2	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	11		6.2	mg/kg dry	06/01/2023	KD
Lead	ND		6.2	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.62	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-8

Lab ID: L23E107-08 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	19		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-9

Lab ID: L23E107-09 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*102%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*96.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*108%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/31/2023	ES
Oil	ND		300	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*74.5%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	11		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-9

Lab ID: L23E107-09 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	17		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-10

Lab ID: L23E107-10 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*100%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*98.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*111%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/31/2023	ES
Oil	ND		300	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*94.5%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	7.9		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-10

Lab ID: L23E107-10 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-11

Lab ID: L23E107-11 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*104%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*98.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*106%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		62	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*108%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.2	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	9.9		6.2	mg/kg dry	06/01/2023	KD
Lead	ND		6.2	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.62	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-11

Lab ID: L23E107-11 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	19		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-12

Lab ID: L23E107-12 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*104%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*98.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*109%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/31/2023	ES
Oil	ND		300	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*70.7%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	14		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-12

Lab ID: L23E107-12 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-13

Lab ID: L23E107-13 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*102%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*96.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		18	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*105%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		63	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*91.3%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.3	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.3	mg/kg dry	06/01/2023	KD
Chromium	11		6.3	mg/kg dry	06/01/2023	KD
Lead	ND		6.3	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.63	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-13

Lab ID: L23E107-13 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	20		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-14

Lab ID: L23E107-14 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*106%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*100%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*110%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*100%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	11		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-14

Lab ID: L23E107-14 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-15

Lab ID: L23E107-15 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*108%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*102%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*108%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		62	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*72.7%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.2	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	12		6.2	mg/kg dry	06/01/2023	KD
Lead	ND		6.2	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.62	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-15

Lab ID: L23E107-15 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	20		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-16

Lab ID: L23E107-16 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*98.0%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*94.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*107%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		62	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*96.5%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.2	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	14		6.2	mg/kg dry	06/01/2023	KD
Lead	ND		6.2	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.62	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-16

Lab ID: L23E107-16 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	19		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-17

Lab ID: L23E107-17 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*100%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*94.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*106%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/31/2023	ES
Oil	ND		300	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*103%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	13		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-17

Lab ID: L23E107-17 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-18

Lab ID: L23E107-18 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*100%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*94.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*106%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/31/2023	ES
Oil	ND		300	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*68.0%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	10		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-18

Lab ID: L23E107-18 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-19

Lab ID: L23E107-19 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*102%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*98.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/30/2023	PB
Surrogate: Toluene-d8	*98.2%*		*41-142*		*05/30/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/31/2023	ES
Oil	ND		310	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*101%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	11		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-19

Lab ID: L23E107-19 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	19		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-20

Lab ID: L23E107-20 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*100%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*96.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*104%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		59	mg/kg dry	05/31/2023	ES
Oil	ND		300	mg/kg dry	05/31/2023	ES
Surrogate: 2-FBP	*96.1%*		*43.6-129*		*05/31/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		5.9	mg/kg dry	06/05/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	9.6		5.9	mg/kg dry	06/01/2023	KD
Lead	ND		5.9	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.59	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-20

Lab ID: L23E107-20 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	16		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-21

Lab ID: L23E107-21 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*90.0%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*90.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*98.9%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/30/2023	ES
Oil	ND		300	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*74.0%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	16		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-21

Lab ID: L23E107-21 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-22

Lab ID: L23E107-22 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/02/2023	JA
Surrogate: 2-FBP (SIM)	*90.0%*		*52-115*		*06/02/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*92.0%*		*40-116*		*06/02/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*109%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/30/2023	ES
Oil	ND		310	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*68.8%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	12		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-22

Lab ID: L23E107-22 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-23

Lab ID: L23E107-23 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benz(a)anthracene (SIM)	ND		0.060	mg/kg dry	06/05/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Surrogate: 2-FBP (SIM)	*98.0%*		*52-115*		*06/05/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*98.0%*		*40-116*		*06/05/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*107%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		60	mg/kg dry	05/30/2023	ES
Oil	ND		300	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*69.6%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.0	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	12		6.0	mg/kg dry	06/01/2023	KD
Lead	ND		6.0	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.60	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-23

Lab ID: L23E107-23 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	17		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-24

Lab ID: L23E107-24 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Surrogate: 2-FBP (SIM)	*90.0%*		*52-115*		*06/03/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*92.0%*		*40-116*		*06/03/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*107%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		60	mg/kg dry	05/30/2023	ES
Oil	ND		300	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*72.0%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.0	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	12		6.0	mg/kg dry	06/01/2023	KD
Lead	ND		6.0	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.60	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-24

Lab ID: L23E107-24 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	17		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-25

Lab ID: L23E107-25 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Surrogate: 2-FBP (SIM)	*94.0%*		*52-115*		*06/05/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*96.0%*		*40-116*		*06/05/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*108%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		60	mg/kg dry	05/30/2023	ES
Oil	ND		300	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*77.2%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.0	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	11		6.0	mg/kg dry	06/01/2023	KD
Lead	ND		6.0	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.60	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-25

Lab ID: L23E107-25 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	17		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-26

Lab ID: L23E107-26 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Surrogate: 2-FBP (SIM)	*106%*		*52-115*		*06/05/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*106%*		*40-116*		*06/05/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*109%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		60	mg/kg dry	05/30/2023	ES
Oil	ND		300	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*98.2%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.0	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	12		6.0	mg/kg dry	06/01/2023	KD
Lead	ND		6.0	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.60	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-26

Lab ID: L23E107-26 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	17		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-27

Lab ID: L23E107-27 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Surrogate: 2-FBP (SIM)	*112%*		*52-115*		*06/05/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*112%*		*40-116*		*06/05/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*105%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		60	mg/kg dry	05/30/2023	ES
Oil	ND		300	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*106%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.0	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	10		6.0	mg/kg dry	06/01/2023	KD
Lead	ND		6.0	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.60	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-27

Lab ID: L23E107-27 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	17		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-28

Lab ID: L23E107-28 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
2-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
1-Methylnaphthalene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Acenaphthylene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Acenaphthene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Fluorene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Phenanthrene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Anthracene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Fluoranthene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Pyrene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Benz(a)anthracene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Chrysene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Benzo(a)pyrene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.025	mg/kg dry	06/03/2023	JA
Surrogate: 2-FBP (SIM)	*92.0%*		*52-115*		*06/03/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*90.0%*		*40-116*		*06/03/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*107%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		62	mg/kg dry	05/30/2023	ES
Oil	ND		310	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*75.5%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.2	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	14		6.2	mg/kg dry	06/01/2023	KD
Lead	ND		6.2	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.62	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-28

Lab ID: L23E107-28 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	19		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-29

Lab ID: L23E107-29 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Surrogate: 2-FBP (SIM)	*96.0%*		*52-115*		*06/05/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*96.0%*		*40-116*		*06/05/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*105%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		60	mg/kg dry	05/30/2023	ES
Oil	ND		300	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*99.4%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.0	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	9.6		6.0	mg/kg dry	06/01/2023	KD
Lead	ND		6.0	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.60	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-29

Lab ID: L23E107-29 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	16		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-30

Lab ID: L23E107-30 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Surrogate: 2-FBP (SIM)	*94.0%*		*52-115*		*06/03/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*96.0%*		*40-116*		*06/03/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		16	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*110%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		59	mg/kg dry	05/30/2023	ES
Oil	ND		300	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*106%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		5.9	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	7.4		5.9	mg/kg dry	06/01/2023	KD
Lead	ND		5.9	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.59	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-30

Lab ID: L23E107-30 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	15		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-31

Lab ID: L23E107-31 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
Naphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/05/2023	JA
Surrogate: 2-FBP (SIM)	*96.0%*		*52-115*		*06/05/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*96.0%*		*40-116*		*06/05/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*107%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/30/2023	ES
Oil	ND		300	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*71.1%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	7.5		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-31

Lab ID: L23E107-31 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-32

Lab ID: L23E107-32 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Semivolatile Organic Compounds by EPA Method 8270E						
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Acenaphthylene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Acenaphthene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Fluorene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Phenanthrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Anthracene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Fluoranthene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Pyrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Chrysene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry	06/03/2023	JA
Surrogate: 2-FBP (SIM)	*92.0%*		*52-115*		*06/03/2023*	*JA*
Surrogate: p-Terphenyl-d14 (SIM)	*92.0%*		*40-116*		*06/03/2023*	*JA*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		17	mg/kg dry	05/31/2023	PB
Surrogate: Toluene-d8	*108%*		*41-142*		*05/31/2023*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		61	mg/kg dry	05/30/2023	ES
Oil	ND		310	mg/kg dry	05/30/2023	ES
Surrogate: 2-FBP	*100%*		*43.6-129*		*05/30/2023*	*ES*
Total Metals by EPA Method 7010						
Arsenic	ND		6.1	mg/kg dry	06/06/2023	KD
Cadmium	ND		1.2	mg/kg dry	06/01/2023	KD
Chromium	9.2		6.1	mg/kg dry	06/01/2023	KD
Lead	ND		6.1	mg/kg dry	06/02/2023	KD
Mercury by EPA 7471B						
Mercury	ND		0.61	mg/kg dry	05/30/2023	KD
Moisture by ASTM D2216-19						

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Sample Results (Continued)

Client Sample ID: D-32

Lab ID: L23E107-32 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Moisture by ASTM D2216-19 (Continued)						
Moisture	18		0.50	%	05/30/2023	SG

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control

Semivolatile Organic Compounds by EPA Method 8270E

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BXE0170 - Extraction										
Blank (BXE0170-BLK1)					Prepared: 5/30/2023 Analyzed: 6/2/2023					
Naphthalene (SIM)	ND		0.020	mg/kg wet						
2-Methylnaphthalene (SIM)	ND		0.020	mg/kg wet						
1-Methylnaphthalene (SIM)	ND		0.020	mg/kg wet						
Acenaphthylene (SIM)	ND		0.020	mg/kg wet						
Acenaphthene (SIM)	ND		0.020	mg/kg wet						
Fluorene (SIM)	ND		0.020	mg/kg wet						
Phenanthrene (SIM)	ND		0.020	mg/kg wet						
Anthracene (SIM)	ND		0.020	mg/kg wet						
Fluoranthene (SIM)	ND		0.020	mg/kg wet						
Pyrene (SIM)	ND		0.020	mg/kg wet						
Benz(a)anthracene (SIM)	ND		0.020	mg/kg wet						
Chrysene (SIM)	ND		0.020	mg/kg wet						
Benzo(b)fluoranthene (SIM)	ND		0.020	mg/kg wet						
Benzo(k)fluoranethene (SIM)	ND		0.020	mg/kg wet						
Benzo(a)pyrene (SIM)	ND		0.020	mg/kg wet						
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.020	mg/kg wet						
Dibenz(a,h)anthracene (SIM)	ND		0.020	mg/kg wet						
Benzo(g,h,i)perylene (SIM)	ND		0.020	mg/kg wet						
Surrogate: 2-FBP (SIM)			*0.470*	*mg/kg*	*0.500*		*94.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.490*	*mg/kg*	*0.500*		*98.0*	*40-116*		
LCS (BXE0170-BS1)					Prepared: 5/30/2023 Analyzed: 6/1/2023					
Naphthalene (SIM)	1.48		0.020	mg/kg wet	2.00		74.0	60-130		
2-Methylnaphthalene (SIM)	1.47		0.020	mg/kg wet	2.00		73.7	60-130		
1-Methylnaphthalene (SIM)	1.68		0.020	mg/kg wet	2.00		84.1	60-130		
Acenaphthylene (SIM)	1.44		0.020	mg/kg wet	2.00		71.8	60-130		
Acenaphthene (SIM)	1.55		0.020	mg/kg wet	2.00		77.5	60-130		
Fluorene (SIM)	1.75		0.020	mg/kg wet	2.00		87.6	60-130		
Phenanthrene (SIM)	1.78		0.020	mg/kg wet	2.00		88.9	60-130		
Anthracene (SIM)	1.40		0.020	mg/kg wet	2.00		70.2	60-130		
Fluoranthene (SIM)	1.69		0.020	mg/kg wet	2.00		84.6	60-130		
Pyrene (SIM)	1.79		0.020	mg/kg wet	2.00		89.4	60-130		
Benz(a)anthracene (SIM)	1.62		0.020	mg/kg wet	2.00		81.0	60-130		
Chrysene (SIM)	1.77	I	0.020	mg/kg wet	2.00		88.6	60-130		
Benzo(b)fluoranthene (SIM)	2.65	I, S3	0.020	mg/kg wet	2.00		132	60-130		
Benzo(k)fluoranethene (SIM)	2.63	I, S3	0.020	mg/kg wet	2.00		132	60-130		
Benzo(a)pyrene (SIM)	2.23	I	0.020	mg/kg wet	2.00		111	60-130		
Indeno(1,2,3-cd)pyrene (SIM)	2.26	I	0.020	mg/kg wet	2.00		113	60-130		
Dibenz(a,h)anthracene (SIM)	1.79	I	0.020	mg/kg wet	2.00		89.5	60-130		
Benzo(g,h,i)perylene (SIM)	2.26	I	0.020	mg/kg wet	2.00		113	60-130		
Surrogate: 2-FBP (SIM)			*0.460*	*mg/kg*	*0.500*		*92.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.440*	*mg/kg*	*0.500*		*88.0*	*40-116*		

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Semivolatile Organic Compounds by EPA Method 8270E (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Duplicate (BXE0170-DUP1)		**Parent: L23E107-01**			Prepared: 5/30/2023 Analyzed: 6/2/2023					
Naphthalene (SIM)	ND		0.024	mg/kg dry		ND				35
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry		ND				35
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry		ND				35
Acenaphthylene (SIM)	ND		0.024	mg/kg dry		ND				35
Acenaphthene (SIM)	ND		0.024	mg/kg dry		ND				35
Fluorene (SIM)	ND		0.024	mg/kg dry		ND				35
Phenanthrene (SIM)	ND		0.024	mg/kg dry		ND				35
Anthracene (SIM)	ND		0.024	mg/kg dry		ND				35
Fluoranthene (SIM)	ND		0.024	mg/kg dry		ND				35
Pyrene (SIM)	ND		0.024	mg/kg dry		ND				35
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry		ND				35
Chrysene (SIM)	ND		0.024	mg/kg dry		ND				35
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry		ND				35
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry		ND				35
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry		ND				35
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry		ND				35
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry		ND				35
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry		ND				35
Surrogate: 2-FBP (SIM)			*0.480*	*mg/kg*	*0.500*		*96.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.470*	*mg/kg*	*0.500*		*94.0*	*40-116*		
Matrix Spike (BXE0170-MS1)		**Parent: L23E107-01**			Prepared: 5/30/2023 Analyzed: 6/2/2023					
Naphthalene (SIM)	1.75	S1	0.024	mg/kg dry	2.42	ND	72.3	75-104		
2-Methylnaphthalene (SIM)	1.71	S1	0.024	mg/kg dry	2.42	ND	70.6	73-102		
1-Methylnaphthalene (SIM)	1.96		0.024	mg/kg dry	2.42	ND	81.0	76-107		
Acenaphthylene (SIM)	1.66	S1	0.024	mg/kg dry	2.42	ND	68.8	72-96		
Acenaphthene (SIM)	1.82	S1	0.024	mg/kg dry	2.42	ND	75.2	82-105		
Fluorene (SIM)	2.04		0.024	mg/kg dry	2.42	ND	84.6	76-104		
Phenanthrene (SIM)	2.11		0.024	mg/kg dry	2.42	ND	87.2	82-112		
Anthracene (SIM)	1.65	S1	0.024	mg/kg dry	2.42	ND	68.2	75-105		
Fluoranthene (SIM)	2.03		0.024	mg/kg dry	2.42	ND	83.9	71-112		
Pyrene (SIM)	1.99		0.024	mg/kg dry	2.42	ND	82.3	71-100		
Benz(a)anthracene (SIM)	1.87		0.024	mg/kg dry	2.42	ND	77.3	60-100		
Chrysene (SIM)	2.04		0.024	mg/kg dry	2.42	ND	84.5	67-110		
Benzo(b)fluoranthene (SIM)	1.82		0.024	mg/kg dry	2.42	ND	75.5	17-130		
Benzo(k)fluoranethene (SIM)	1.91		0.024	mg/kg dry	2.42	ND	78.9	41-127		
Benzo(a)pyrene (SIM)	1.69		0.024	mg/kg dry	2.42	ND	69.8	30-105		
Indeno(1,2,3-cd)pyrene (SIM)	2.11		0.024	mg/kg dry	2.42	ND	87.2	10-120		
Dibenz(a,h)anthracene (SIM)	1.81		0.024	mg/kg dry	2.42	ND	74.9	10-124		
Benzo(g,h,i)perylene (SIM)	2.10		0.024	mg/kg dry	2.42	ND	86.7	26-108		
Surrogate: 2-FBP (SIM)			*0.440*	*mg/kg*	*0.500*		*88.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.420*	*mg/kg*	*0.500*		*84.0*	*40-116*		

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Semivolatile Organic Compounds by EPA Method 8270E (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Matrix Spike Dup (BXE0170-MSD1)		**Parent: L23E107-01**			Prepared: 5/30/2023 Analyzed: 6/2/2023					
Naphthalene (SIM)	1.88		0.024	mg/kg dry	2.42	ND	78.0	75-104	7.58	35
2-Methylnaphthalene (SIM)	1.84		0.024	mg/kg dry	2.42	ND	76.1	73-102	7.50	35
1-Methylnaphthalene (SIM)	2.11		0.024	mg/kg dry	2.42	ND	87.3	76-107	7.49	35
Acenaphthylene (SIM)	1.78		0.024	mg/kg dry	2.42	ND	73.7	72-96	6.88	35
Acenaphthene (SIM)	1.93	S1	0.024	mg/kg dry	2.42	ND	79.8	82-105	5.94	35
Fluorene (SIM)	2.18		0.024	mg/kg dry	2.42	ND	90.3	76-104	6.52	35
Phenanthrene (SIM)	2.22		0.024	mg/kg dry	2.42	ND	92.0	82-112	5.36	35
Anthracene (SIM)	1.77	S1	0.024	mg/kg dry	2.42	ND	73.2	75-105	7.07	35
Fluoranthene (SIM)	2.16		0.024	mg/kg dry	2.42	ND	89.2	71-112	6.12	35
Pyrene (SIM)	2.14		0.024	mg/kg dry	2.42	ND	88.6	71-100	7.37	35
Benz(a)anthracene (SIM)	1.94		0.024	mg/kg dry	2.42	ND	80.4	60-100	3.93	35
Chrysene (SIM)	2.17		0.024	mg/kg dry	2.42	ND	89.9	67-110	6.19	35
Benzo(b)fluoranthene (SIM)	1.92		0.024	mg/kg dry	2.42	ND	79.5	17-130	5.16	35
Benzo(k)fluoranethene (SIM)	1.97		0.024	mg/kg dry	2.42	ND	81.5	41-127	3.24	35
Benzo(a)pyrene (SIM)	1.82		0.024	mg/kg dry	2.42	ND	75.4	30-105	7.71	35
Indeno(1,2,3-cd)pyrene (SIM)	2.18		0.024	mg/kg dry	2.42	ND	90.1	10-120	3.27	35
Dibenz(a,h)anthracene (SIM)	1.90		0.024	mg/kg dry	2.42	ND	78.5	10-124	4.69	35
Benzo(g,h,i)perylene (SIM)	2.18		0.024	mg/kg dry	2.42	ND	90.4	26-108	4.18	35
Surrogate: 2-FBP (SIM)			*0.460*	*mg/kg*	*0.500*		*92.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.430*	*mg/kg*	*0.500*		*86.0*	*40-116*		
Blank (BXE0176-BLK1)					Prepared: 5/30/2023 Analyzed: 6/2/2023					
Naphthalene (SIM)	ND		0.020	mg/kg wet						
2-Methylnaphthalene (SIM)	ND		0.020	mg/kg wet						
1-Methylnaphthalene (SIM)	ND		0.020	mg/kg wet						
Acenaphthylene (SIM)	ND		0.020	mg/kg wet						
Acenaphthene (SIM)	ND		0.020	mg/kg wet						
Fluorene (SIM)	ND		0.020	mg/kg wet						
Phenanthrene (SIM)	ND		0.020	mg/kg wet						
Anthracene (SIM)	ND		0.020	mg/kg wet						
Fluoranthene (SIM)	ND		0.020	mg/kg wet						
Pyrene (SIM)	ND		0.020	mg/kg wet						
Benz(a)anthracene (SIM)	ND		0.020	mg/kg wet						
Chrysene (SIM)	ND		0.020	mg/kg wet						
Benzo(b)fluoranthene (SIM)	ND		0.020	mg/kg wet						
Benzo(k)fluoranethene (SIM)	ND		0.020	mg/kg wet						
Benzo(a)pyrene (SIM)	ND		0.020	mg/kg wet						
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.020	mg/kg wet						
Dibenz(a,h)anthracene (SIM)	ND		0.020	mg/kg wet						
Benzo(g,h,i)perylene (SIM)	ND		0.020	mg/kg wet						
Surrogate: 2-FBP (SIM)			*0.490*	*mg/kg*	*0.500*		*98.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.480*	*mg/kg*	*0.500*		*96.0*	*40-116*		

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Semivolatile Organic Compounds by EPA Method 8270E (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
LCS (BXE0176-BS1)					Prepared: 5/30/2023 Analyzed: 6/2/2023					
Naphthalene (SIM)	1.56		0.020	mg/kg wet	2.00		77.8	60-130		
2-Methylnaphthalene (SIM)	1.51		0.020	mg/kg wet	2.00		75.3	60-130		
1-Methylnaphthalene (SIM)	1.71		0.020	mg/kg wet	2.00		85.6	60-130		
Acenaphthylene (SIM)	1.63		0.020	mg/kg wet	2.00		81.3	60-130		
Acenaphthene (SIM)	1.57		0.020	mg/kg wet	2.00		78.3	60-130		
Fluorene (SIM)	1.76		0.020	mg/kg wet	2.00		88.2	60-130		
Phenanthrene (SIM)	1.74		0.020	mg/kg wet	2.00		87.1	60-130		
Anthracene (SIM)	1.51		0.020	mg/kg wet	2.00		75.3	60-130		
Fluoranthene (SIM)	1.77		0.020	mg/kg wet	2.00		88.5	60-130		
Pyrene (SIM)	1.75		0.020	mg/kg wet	2.00		87.5	60-130		
Benz(a)anthracene (SIM)	1.73		0.020	mg/kg wet	2.00		86.4	60-130		
Chrysene (SIM)	1.79		0.020	mg/kg wet	2.00		89.4	60-130		
Benzo(b)fluoranthene (SIM)	1.61		0.020	mg/kg wet	2.00		80.3	60-130		
Benzo(k)fluoranethene (SIM)	1.69		0.020	mg/kg wet	2.00		84.3	60-130		
Benzo(a)pyrene (SIM)	1.63		0.020	mg/kg wet	2.00		81.3	60-130		
Indeno(1,2,3-cd)pyrene (SIM)	1.85		0.020	mg/kg wet	2.00		92.3	60-130		
Dibenz(a,h)anthracene (SIM)	1.60		0.020	mg/kg wet	2.00		79.8	60-130		
Benzo(g,h,i)perylene (SIM)	1.78		0.020	mg/kg wet	2.00		88.8	60-130		
Surrogate: 2-FBP (SIM)			*0.460*	*mg/kg*	*0.500*		*92.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.440*	*mg/kg*	*0.500*		*88.0*	*40-116*		
Duplicate (BXE0176-DUP1)		**Parent: L23E107-21**			Prepared: 5/30/2023 Analyzed: 6/2/2023					
Naphthalene (SIM)	ND		0.024	mg/kg dry		ND				35
2-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry		ND				35
1-Methylnaphthalene (SIM)	ND		0.024	mg/kg dry		ND				35
Acenaphthylene (SIM)	ND		0.024	mg/kg dry		ND				35
Acenaphthene (SIM)	ND		0.024	mg/kg dry		ND				35
Fluorene (SIM)	ND		0.024	mg/kg dry		ND				35
Phenanthrene (SIM)	ND		0.024	mg/kg dry		ND				35
Anthracene (SIM)	ND		0.024	mg/kg dry		ND				35
Fluoranthene (SIM)	ND		0.024	mg/kg dry		ND				35
Pyrene (SIM)	ND		0.024	mg/kg dry		ND				35
Benz(a)anthracene (SIM)	ND		0.024	mg/kg dry		ND				35
Chrysene (SIM)	ND		0.024	mg/kg dry		ND				35
Benzo(b)fluoranthene (SIM)	ND		0.024	mg/kg dry		ND				35
Benzo(k)fluoranethene (SIM)	ND		0.024	mg/kg dry		ND				35
Benzo(a)pyrene (SIM)	ND		0.024	mg/kg dry		ND				35
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.024	mg/kg dry		ND				35
Dibenz(a,h)anthracene (SIM)	ND		0.024	mg/kg dry		ND				35
Benzo(g,h,i)perylene (SIM)	ND		0.024	mg/kg dry		ND				35
Surrogate: 2-FBP (SIM)			*0.460*	*mg/kg*	*0.500*		*92.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.460*	*mg/kg*	*0.500*		*92.0*	*40-116*		

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Semivolatile Organic Compounds by EPA Method 8270E (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Matrix Spike (BXE0176-MS1)		**Parent: L23E107-21**			Prepared: 5/30/2023 Analyzed: 6/2/2023					
Naphthalene (SIM)	1.92		0.024	mg/kg dry	2.43	ND	78.9	75-104		
2-Methylnaphthalene (SIM)	1.88		0.024	mg/kg dry	2.43	ND	77.3	73-102		
1-Methylnaphthalene (SIM)	2.14		0.024	mg/kg dry	2.43	ND	88.1	76-107		
Acenaphthylene (SIM)	1.94		0.024	mg/kg dry	2.43	ND	79.9	72-96		
Acenaphthene (SIM)	1.92	S1	0.024	mg/kg dry	2.43	ND	78.9	82-105		
Fluorene (SIM)	2.16		0.024	mg/kg dry	2.43	ND	89.1	76-104		
Phenanthrene (SIM)	2.15		0.024	mg/kg dry	2.43	ND	88.6	82-112		
Anthracene (SIM)	1.84		0.024	mg/kg dry	2.43	ND	75.7	75-105		
Fluoranthene (SIM)	2.20		0.024	mg/kg dry	2.43	ND	90.5	71-112		
Pyrene (SIM)	2.17		0.024	mg/kg dry	2.43	ND	89.2	71-100		
Benz(a)anthracene (SIM)	2.07		0.024	mg/kg dry	2.43	ND	85.2	60-100		
Chrysene (SIM)	2.20		0.024	mg/kg dry	2.43	ND	90.4	67-110		
Benzo(b)fluoranthene (SIM)	2.00		0.024	mg/kg dry	2.43	ND	82.4	17-130		
Benzo(k)fluoranethene (SIM)	1.99		0.024	mg/kg dry	2.43	ND	81.9	41-127		
Benzo(a)pyrene (SIM)	1.69		0.024	mg/kg dry	2.43	ND	69.4	30-105		
Indeno(1,2,3-cd)pyrene (SIM)	2.12		0.024	mg/kg dry	2.43	ND	87.2	10-120		
Dibenz(a,h)anthracene (SIM)	1.93		0.024	mg/kg dry	2.43	ND	79.4	10-124		
Benzo(g,h,i)perylene (SIM)	2.14		0.024	mg/kg dry	2.43	ND	87.9	26-108		
Surrogate: 2-FBP (SIM)			*0.460*	*mg/kg*	*0.500*		*92.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.450*	*mg/kg*	*0.500*		*90.0*	*40-116*		
Matrix Spike Dup (BXE0176-MSD1)		**Parent: L23E107-21**			Prepared: 5/30/2023 Analyzed: 6/2/2023					
Naphthalene (SIM)	1.88		0.024	mg/kg dry	2.43	ND	77.3	75-104	2.05	35
2-Methylnaphthalene (SIM)	1.85		0.024	mg/kg dry	2.43	ND	76.2	73-102	1.43	35
1-Methylnaphthalene (SIM)	2.12		0.024	mg/kg dry	2.43	ND	87.4	76-107	0.798	35
Acenaphthylene (SIM)	1.91		0.024	mg/kg dry	2.43	ND	78.6	72-96	1.64	35
Acenaphthene (SIM)	1.89	S1	0.024	mg/kg dry	2.43	ND	77.8	82-105	1.40	35
Fluorene (SIM)	2.13		0.024	mg/kg dry	2.43	ND	87.7	76-104	1.58	35
Phenanthrene (SIM)	2.12		0.024	mg/kg dry	2.43	ND	87.4	82-112	1.36	35
Anthracene (SIM)	1.81	S1	0.024	mg/kg dry	2.43	ND	74.6	75-105	1.46	35
Fluoranthene (SIM)	2.16		0.024	mg/kg dry	2.43	ND	89.0	71-112	1.67	35
Pyrene (SIM)	2.13		0.024	mg/kg dry	2.43	ND	87.7	71-100	1.70	35
Benz(a)anthracene (SIM)	2.03		0.024	mg/kg dry	2.43	ND	83.5	60-100	2.02	35
Chrysene (SIM)	2.17		0.024	mg/kg dry	2.43	ND	89.5	67-110	1.00	35
Benzo(b)fluoranthene (SIM)	1.84		0.024	mg/kg dry	2.43	ND	75.8	17-130	8.34	35
Benzo(k)fluoranethene (SIM)	1.96		0.024	mg/kg dry	2.43	ND	80.5	41-127	1.72	35
Benzo(a)pyrene (SIM)	1.75		0.024	mg/kg dry	2.43	ND	72.2	30-105	3.95	35
Indeno(1,2,3-cd)pyrene (SIM)	2.06		0.024	mg/kg dry	2.43	ND	85.0	10-120	2.56	35
Dibenz(a,h)anthracene (SIM)	1.84		0.024	mg/kg dry	2.43	ND	75.6	10-124	4.90	35
Benzo(g,h,i)perylene (SIM)	2.09		0.024	mg/kg dry	2.43	ND	86.0	26-108	2.19	35
Surrogate: 2-FBP (SIM)			*0.420*	*mg/kg*	*0.500*		*84.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.420*	*mg/kg*	*0.500*		*84.0*	*40-116*		
Blank (BXF0028-BLK1)					Prepared: 5/30/2023 Analyzed: 6/5/2023					
Naphthalene (SIM)	ND		0.020	mg/kg wet						
2-Methylnaphthalene (SIM)	ND		0.020	mg/kg wet						
1-Methylnaphthalene (SIM)	ND		0.020	mg/kg wet						
Acenaphthylene (SIM)	ND		0.020	mg/kg wet						
Acenaphthene (SIM)	ND		0.020	mg/kg wet						
Fluorene (SIM)	ND		0.020	mg/kg wet						
Phenanthrene (SIM)	ND		0.020	mg/kg wet						
Anthracene (SIM)	ND		0.020	mg/kg wet						
Fluoranthene (SIM)	ND		0.020	mg/kg wet						

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Semivolatile Organic Compounds by EPA Method 8270E (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Blank (BXF0028-BLK1)					Prepared: 5/30/2023 Analyzed: 6/5/2023					
Pyrene (SIM)	ND		0.020	mg/kg wet						
Benz(a)anthracene (SIM)	ND		0.020	mg/kg wet						
Chrysene (SIM)	ND		0.020	mg/kg wet						
Benzo(b)fluoranthene (SIM)	ND		0.020	mg/kg wet						
Benzo(k)fluoranethene (SIM)	ND		0.020	mg/kg wet						
Benzo(a)pyrene (SIM)	ND		0.020	mg/kg wet						
Indeno(1,2,3-cd)pyrene (SIM)	ND		0.020	mg/kg wet						
Dibenz(a,h)anthracene (SIM)	ND		0.020	mg/kg wet						
Benzo(g,h,i)perylene (SIM)	ND		0.020	mg/kg wet						
Surrogate: 2-FBP (SIM)			*0.480*	*mg/kg*	*0.500*		*96.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.490*	*mg/kg*	*0.500*		*98.0*	*40-116*		
LCS (BXF0028-BS1)					Prepared: 5/30/2023 Analyzed: 6/5/2023					
Naphthalene (SIM)	1.60		0.020	mg/kg wet	2.00		80.1	60-130		
2-Methylnaphthalene (SIM)	1.54		0.020	mg/kg wet	2.00		77.0	60-130		
1-Methylnaphthalene (SIM)	1.79		0.020	mg/kg wet	2.00		89.6	60-130		
Acenaphthylene (SIM)	1.56		0.020	mg/kg wet	2.00		77.8	60-130		
Acenaphthene (SIM)	1.63		0.020	mg/kg wet	2.00		81.7	60-130		
Fluorene (SIM)	1.81		0.020	mg/kg wet	2.00		90.6	60-130		
Phenanthrene (SIM)	1.87		0.020	mg/kg wet	2.00		93.4	60-130		
Anthracene (SIM)	1.52		0.020	mg/kg wet	2.00		76.1	60-130		
Fluoranthene (SIM)	1.74		0.020	mg/kg wet	2.00		86.9	60-130		
Pyrene (SIM)	2.00		0.020	mg/kg wet	2.00		100	60-130		
Benz(a)anthracene (SIM)	1.71		0.020	mg/kg wet	2.00		85.7	60-130		
Chrysene (SIM)	1.94		0.020	mg/kg wet	2.00		97.1	60-130		
Benzo(b)fluoranthene (SIM)	1.82		0.020	mg/kg wet	2.00		90.8	60-130		
Benzo(k)fluoranethene (SIM)	1.93		0.020	mg/kg wet	2.00		96.7	60-130		
Benzo(a)pyrene (SIM)	1.74		0.020	mg/kg wet	2.00		86.8	60-130		
Indeno(1,2,3-cd)pyrene (SIM)	1.80		0.020	mg/kg wet	2.00		90.2	60-130		
Dibenz(a,h)anthracene (SIM)	1.59		0.020	mg/kg wet	2.00		79.7	60-130		
Benzo(g,h,i)perylene (SIM)	1.89		0.020	mg/kg wet	2.00		94.3	60-130		
Surrogate: 2-FBP (SIM)			*0.460*	*mg/kg*	*0.500*		*92.0*	*52-115*		
Surrogate: p-Terphenyl-d14 (SIM)			*0.470*	*mg/kg*	*0.500*		*94.0*	*40-116*		

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Gasoline by Method NWTPH-Gx

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BXE0175 - VOA										
Blank (BXE0175-BLK1)					Prepared: 5/26/2023 Analyzed: 5/30/2023					
Gasoline	ND		10	mg/kg wet						
Surrogate: Toluene-d8			*19.9*	*ug/L*	*20.0*		*99.4*	*41-142*		
Blank (BXE0175-BLK2)					Prepared: 5/26/2023 Analyzed: 5/31/2023					
Gasoline	ND		10	mg/kg wet						
Surrogate: Toluene-d8			*19.0*	*ug/L*	*20.0*		*94.9*	*41-142*		
Duplicate (BXE0175-DUP1)		**Parent: L23E107-01**			Prepared: 5/26/2023 Analyzed: 5/30/2023					
Gasoline	ND		28	mg/kg dry		ND				200
Surrogate: Toluene-d8			*20.4*	*ug/L*	*20.0*		*102*	*41-142*		
Duplicate (BXE0175-DUP2)		**Parent: L23E107-11**			Prepared: 5/26/2023 Analyzed: 5/30/2023					
Gasoline	ND		29	mg/kg dry		ND				200
Surrogate: Toluene-d8			*22.2*	*ug/L*	*20.0*		*111*	*41-142*		
Duplicate (BXE0175-DUP3)		**Parent: L23E107-21**			Prepared: 5/26/2023 Analyzed: 5/30/2023					
Gasoline	ND		29	mg/kg dry		ND				200
Surrogate: Toluene-d8			*20.5*	*ug/L*	*20.0*		*103*	*41-142*		
Duplicate (BXE0175-DUP4)		**Parent: L23E107-31**			Prepared: 5/26/2023 Analyzed: 5/30/2023					
Gasoline	ND		29	mg/kg dry		ND				200
Surrogate: Toluene-d8			*21.2*	*ug/L*	*20.0*		*106*	*41-142*		

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Diesel and Oil by NWTPH-Dx/Dx

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BXE0168 - Extraction										
Blank (BXE0168-BLK1)					Prepared: 5/30/2023 Analyzed: 5/31/2023					
Diesel	ND		50	mg/kg wet						
Oil	ND		250	mg/kg wet						
Surrogate: 2-FBP			*20.4*	*ug/mL*	*20.0*		*102*	*43.6-129*		
LCS (BXE0168-BS1)					Prepared: 5/30/2023 Analyzed: 5/31/2023					
Diesel	116		50	mg/kg wet	100		116	72.6-130		
Surrogate: 2-FBP			*25.2*	*ug/mL*	*20.0*		*126*	*43.6-129*		
Duplicate (BXE0168-DUP1)		**Parent: L23E107-01**			Prepared: 5/30/2023 Analyzed: 5/31/2023					
Diesel	ND		60	mg/kg dry		ND				35
Oil	ND		300	mg/kg dry		ND				35
Surrogate: 2-FBP			*14.5*	*ug/mL*	*20.0*		*72.3*	*43.6-129*		
Duplicate (BXE0168-DUP2)		**Parent: L23E107-20**			Prepared: 5/30/2023 Analyzed: 5/31/2023					
Diesel	ND		59	mg/kg dry		ND				35
Oil	ND		300	mg/kg dry		ND				35
Surrogate: 2-FBP			*18.8*	*ug/mL*	*20.0*		*94.2*	*43.6-129*		
Blank (BXE0169-BLK1)					Prepared & Analyzed: 5/30/2023					
Diesel	ND		50	mg/kg wet						
Oil	ND		250	mg/kg wet						
Surrogate: 2-FBP			*20.8*	*ug/mL*	*20.0*		*104*	*43.6-129*		
LCS (BXE0169-BS1)					Prepared & Analyzed: 5/30/2023					
Diesel	95.6		50	mg/kg wet	100		95.6	72.6-130		
Surrogate: 2-FBP			*22.8*	*ug/mL*	*20.0*		*114*	*43.6-129*		
Duplicate (BXE0169-DUP1)		**Parent: L23E104-01**			Prepared & Analyzed: 5/30/2023					
Diesel	24600		560	mg/kg dry		22500			9.21	35
Oil	ND		2800	mg/kg dry		ND				35
Surrogate: 2-FBP		*F*	*182*	*ug/mL*	*20.0*		*908*	*43.6-129*		
Duplicate (BXE0169-DUP2)		**Parent: L23E107-32**			Prepared & Analyzed: 5/30/2023					
Diesel	ND		61	mg/kg dry		ND				35
Oil	ND		310	mg/kg dry		ND				35
Surrogate: 2-FBP			*19.5*	*ug/mL*	*20.0*		*97.4*	*43.6-129*		

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Total Metals by EPA Method 7010

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BXF0003 - Metals Digest										
Blank (BXF0003-BLK1)					Prepared: 6/1/2023 Analyzed: 6/5/2023					
Arsenic	ND		5.0	mg/kg wet						
Cadmium	ND		1.0	mg/kg wet						
Chromium	ND		5.0	mg/kg wet						
Lead	ND		5.0	mg/kg wet						
LCS (BXF0003-BS1)					Prepared: 6/1/2023 Analyzed: 6/5/2023					
Arsenic	1.03		5.0	mg/kg wet	1.00		103	80-120		
Cadmium	0.826		2.0	mg/kg wet	1.00		82.6	80-120		
Chromium	1.18		5.0	mg/kg wet	1.00		118	80-120		
Lead	1.04		5.0	mg/kg wet	1.00		104	80-120		
LCS Dup (BXF0003-BSD1)					Prepared: 6/1/2023 Analyzed: 6/5/2023					
Arsenic	0.878		5.0	mg/kg wet	1.00		87.8	80-120	16.3	20
Cadmium	0.860		2.0	mg/kg wet	1.00		86.0	80-120	3.94	20
Chromium	1.15		5.0	mg/kg wet	1.00		115	80-120	2.28	20
Lead	0.901		5.0	mg/kg wet	1.00		90.1	80-120	14.3	20
Duplicate (BXF0003-DUP1)		**Parent: L23E107-01**			Prepared: 6/1/2023 Analyzed: 6/5/2023					
Arsenic	ND		6.0	mg/kg dry		ND				20
Cadmium	0.0466		1.2	mg/kg dry		ND				20
Chromium	9.33		6.0	mg/kg dry		8.99			3.77	20
Lead	1.43		6.0	mg/kg dry		1.38			3.58	20
Duplicate (BXF0003-DUP2)		**Parent: L23E107-11**			Prepared: 6/1/2023 Analyzed: 6/5/2023					
Arsenic	ND		6.2	mg/kg dry		ND				20
Cadmium	ND		1.2	mg/kg dry		0.0659				20
Chromium	10.6		6.2	mg/kg dry		9.89			7.04	20
Lead	1.50		6.2	mg/kg dry		1.32			12.6	20
Matrix Spike (BXF0003-MS1)		**Parent: L23E107-01**			Prepared: 6/1/2023 Analyzed: 6/5/2023					
Arsenic	1.38		6.0	mg/kg dry	1.21	ND	114	75-125		
Cadmium	1.14		2.4	mg/kg dry	1.21	ND	94.4	75-125		
Chromium	13.7	A	6.0	mg/kg dry	1.21	8.99	394	75-125		
Lead	2.47		6.0	mg/kg dry	1.21	1.38	90.4	75-125		

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Total Metals by EPA Method 7010 (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Matrix Spike Dup (BXF0003-MSD1)		**Parent: L23E107-01**			Prepared: 6/1/2023 Analyzed: 6/5/2023					
Arsenic	1.31		6.0	mg/kg dry	1.21	ND	108	75-125	5.13	20
Cadmium	1.09		2.4	mg/kg dry	1.21	ND	90.3	75-125	4.44	20
Chromium	12.7	A	6.0	mg/kg dry	1.21	8.99	311	75-125	7.54	20
Lead	2.54		6.0	mg/kg dry	1.21	1.38	96.3	75-125	2.82	20
Post Spike (BXF0003-PS1)		**Parent: L23E107-01**			Prepared & Analyzed: 6/1/2023					
Chromium	55.2		240	mg/kg dry	48.3	8.99	95.6	75-125		
Post Spike (BXF0003-PS2)		**Parent: L23E107-01**			Prepared & Analyzed: 6/1/2023					
Chromium	57.6		240	mg/kg dry	48.3	8.99	101	75-125		
Blank (BXF0004-BLK1)					Prepared: 6/1/2023 Analyzed: 6/6/2023					
Arsenic	ND		5.0	mg/kg wet						
Cadmium	ND		1.0	mg/kg wet						
Chromium	ND		5.0	mg/kg wet						
Lead	ND		5.0	mg/kg wet						
LCS (BXF0004-BS1)					Prepared: 6/1/2023 Analyzed: 6/6/2023					
Arsenic	1.17		5.0	mg/kg wet	1.00		117	80-120		
Cadmium	1.02		2.0	mg/kg wet	1.00		102	80-120		
Chromium	1.15		5.0	mg/kg wet	1.00		115	80-120		
Lead	0.870		5.0	mg/kg wet	1.00		87.0	80-120		
LCS Dup (BXF0004-BSD1)					Prepared: 6/1/2023 Analyzed: 6/6/2023					
Arsenic	1.08		5.0	mg/kg wet	1.00		108	80-120	8.41	20
Cadmium	0.935		2.0	mg/kg wet	1.00		93.5	80-120	8.39	20
Chromium	0.986		5.0	mg/kg wet	1.00		98.6	80-120	15.7	20
Lead	0.961		5.0	mg/kg wet	1.00		96.1	80-120	9.96	20
Duplicate (BXF0004-DUP1)		**Parent: L23E107-21**			Prepared: 6/1/2023 Analyzed: 6/6/2023					
Arsenic	ND		6.1	mg/kg dry		2.78				20
Cadmium	ND		1.2	mg/kg dry		ND				20
Chromium	17.8		6.1	mg/kg dry		15.9			11.2	20
Lead	1.24		6.1	mg/kg dry		1.12			9.98	20

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Total Metals by EPA Method 7010 (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Duplicate (BXF0004-DUP2)		**Parent: L23E107-32**			Prepared: 6/1/2023 Analyzed: 6/6/2023					
Arsenic	ND		6.1	mg/kg dry		1.30				20
Cadmium	ND		1.2	mg/kg dry		ND				20
Chromium	7.76		6.1	mg/kg dry		9.15			16.4	20
Lead	ND		6.1	mg/kg dry		0.936				20
Matrix Spike (BXF0004-MS1)		**Parent: L23E107-21**			Prepared: 6/1/2023 Analyzed: 6/6/2023					
Arsenic	4.11		6.1	mg/kg dry	1.21	2.78	110	75-125		
Cadmium	1.14		2.4	mg/kg dry	1.21	ND	93.9	75-125		
Chromium	15.9	A	6.1	mg/kg dry	1.21	15.9	2.01	75-125		
Lead	2.22		6.1	mg/kg dry	1.21	1.12	90.7	75-125		
Matrix Spike Dup (BXF0004-MSD1)		**Parent: L23E107-21**			Prepared: 6/1/2023 Analyzed: 6/6/2023					
Arsenic	4.29		6.1	mg/kg dry	1.21	2.78	125	75-125	4.29	20
Cadmium	1.10		2.4	mg/kg dry	1.21	ND	90.5	75-125	3.64	20
Chromium	16.4	A	6.1	mg/kg dry	1.21	15.9	39.5	75-125	2.82	20
Lead	2.28		6.1	mg/kg dry	1.21	1.12	95.7	75-125	2.73	20
Post Spike (BXF0004-PS1)		**Parent: L23E107-21**			Prepared & Analyzed: 6/1/2023					
Chromium	111		490	mg/kg dry	97.2	15.9	98.0	75-125		
Post Spike (BXF0004-PS2)		**Parent: L23E107-21**			Prepared & Analyzed: 6/1/2023					
Chromium	105		490	mg/kg dry	97.2	15.9	91.5	75-125		

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Mercury by EPA 7471B

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BXE0171 - Metals Digest										
Blank (BXE0171-BLK1)					Prepared & Analyzed: 5/30/2023					
Mercury	ND		0.50	mg/kg wet						
LCS (BXE0171-BS1)					Prepared & Analyzed: 5/30/2023					
Mercury	1.98		0.50	mg/kg wet	2.00		99.0	80-120		
Duplicate (BXE0171-DUP1)		**Parent: L23E107-01**			Prepared & Analyzed: 5/30/2023					
Mercury	ND		0.60	mg/kg dry		ND				20
Duplicate (BXE0171-DUP2)		**Parent: L23E107-11**			Prepared & Analyzed: 5/30/2023					
Mercury	ND		0.62	mg/kg dry		ND				20
Matrix Spike (BXE0171-MS1)		**Parent: L23E107-01**			Prepared & Analyzed: 5/30/2023					
Mercury	2.56		0.60	mg/kg dry	2.42	ND	106	80-120		
Matrix Spike Dup (BXE0171-MSD1)		**Parent: L23E107-01**			Prepared & Analyzed: 5/30/2023					
Mercury	2.45		0.60	mg/kg dry	2.42	ND	101	80-120	4.49	20
Blank (BXE0173-BLK1)					Prepared & Analyzed: 5/30/2023					
Mercury	ND		0.50	mg/kg wet						
LCS (BXE0173-BS1)					Prepared & Analyzed: 5/30/2023					
Mercury	1.75		0.50	mg/kg wet	2.00		87.4	80-120		
Duplicate (BXE0173-DUP1)		**Parent: L23E107-21**			Prepared & Analyzed: 5/30/2023					
Mercury	ND		0.61	mg/kg dry		ND				20
Duplicate (BXE0173-DUP2)		**Parent: L23E107-32**			Prepared & Analyzed: 5/30/2023					
Mercury	ND		0.61	mg/kg dry		ND				20
Matrix Spike (BXE0173-MS1)		**Parent: L23E107-21**			Prepared & Analyzed: 5/30/2023					
Mercury	2.24		0.61	mg/kg dry	2.43	ND	92.0	80-120		
Matrix Spike Dup (BXE0173-MSD1)		**Parent: L23E107-21**			Prepared & Analyzed: 5/30/2023					
Mercury	2.12		0.61	mg/kg dry	2.43	ND	87.4	80-120	5.19	20

Brumfield Construction 2007 Westport Rd Aberdeen, WA 98520	**Project:** Delphi Soil **Project Manager:** Josh Franzke	**City/State:** Aberdeen, WA **Work Order:** L23E107 **Reported:** 06/06/2023 14:55

Quality Control
(Continued)

Moisture by ASTM D2216-19

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BXE0172 - Gen Chem										
LCS (BXE0172-BS1)					Prepared & Analyzed: 5/30/2023					
Moisture	18			%	17.0		103	90-115		
LCS (BXE0174-BS1)					Prepared & Analyzed: 5/30/2023					
Moisture	18			%	17.0		105	90-115		

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

DELPHI SOIL PROJECT
Brumfield Construction
Libby Project # L23E107
Date Received 5/20/2023
Time Received 11:55 AM

Received By JC

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☑ Yes	☐ No	☐ N/A
6. Was an attempt made to cool the samples?	☐ Yes	☑ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	1.5 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	26.5 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☐ Yes	☑ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☑ Yes ☐ No ☑ N/A

Person Notified: Gage Date: 5/26/2023
By Whom: JC Via: Voicemail
Regarding: Sample Volume

19. Comments. Sample D-9, received 4oz jar and empty 20mL VOAs. Transferred volume from jar to VOA upon arrival for Gx analysis.

APPENDIX E

Low Permeability Soil Laboratory Permeability and Proctor Tests

HWA GeoSciences Inc.
DBE/MWBE

January 20, 2023
HWA Project No. 2022-212-23 Task 100

Brumfield Construction, Inc.
2007 Westport Road
PO Box 600
Aberdeen WA, 98520

Attention: Mr. Josh Franzke

Subject: **Materials Laboratory Report**
C Street Landfill
Shelton, WA

Dear Mr. Franzke:

In accordance with your request, HWA GeoSciences Inc. (HWA) performed laboratory testing for the above referenced project. Herein we present the results of our laboratory analyses, which are summarized on the attached Figures and following Tables. The laboratory testing program was performed in general accordance with your instructions and appropriate ASTM Standards as outlined below.

SAMPLE DESCRIPTION: Two samples were delivered to our laboratory on December 19, 2022 by Brumfield Construction personnel. The samples were contained in four 5-gallon buckets (two buckets per sample) designated as Delphi, S-1 and Green Diamond, S-1.

Based on manual-visual methods, the soil description for the samples were as follows:

Delphi, S-1	Dark reddish-brown, silty GRAVEL with sand (GM)
Green Diamond, S-1	Very dark brown, silty SAND with gravel (SM)

PARTICLE SIZE ANALYSIS OF SOILS: The samples were tested to determine the particle size distribution in general accordance with ASTM D6913, using sieve analysis only. The results are plotted on the attached Particle Size Distribution reports, Figures 1 through 2.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL (PROCTOR TEST): The samples were tested using method ASTM D1557 (Modified Proctor) Method C. The test was performed on the portion of the sample passing ¾", as required by the test procedure. The maximum dry density and optimum moisture content result have been corrected for the amount of over-sized material using method ASTM D4718. The test results are summarized on the attached Laboratory Compaction Test reports, Figures 3 through 4.

HYDRAULIC CONDUCTIVITY OF SOIL (FLEXI-WALL TRIAXIAL CHAMBER METHOD): The hydraulic conductivity (also commonly referred to as coefficient of permeability) of the samples was measured in general accordance with method ASTM D5084. The samples were screened over a ¾" sieve in preparation for 4-inch molds and as such the uncorrected modified proctor values were used. Initially, the samples were laboratory compacted to a target density of at least 90% of Modified Proctor at approximately 2% over optimum moisture content. Actual densities achieved were 91.2% of maximum dry density (Delphi) and 90.3% of maximum dry density (Green Diamond). The results of these trials were above the required minimum permeability rate of 1.0×10^{-6} cm/sec. As directed by the client, two additional samples were compacted to a target density of 95% of maximum dry density at approximately 2% over optimum moisture content. Test samples were re-molded and weighed prior to placement within a flexible membrane within a triaxial pressure chamber. An effective confining pressure of 3 psi was applied. Testing was conducted until inflow was approximately equal to outflow and the hydraulic conductivity was essentially steady. A summary of the results is presented below in Tables 1 and 2. The test results are presented in detail on the attached Hydraulic Conductivity Test Report, Figures 5 through 8.

Table 1 - Hydraulic Conductivity Test Results of Delphi, S-1

Sample	% Relative Compaction Uncorrected (D1557)	Dry Unit Weight	Remolded Moisture Content	Hydraulic Conductivity
Delphi, S-1	91.2	112.7 pcf	13.9%	1.6×10^{-6} cm/sec
	95.0	117.4 pcf	15.3%	2.6×10^{-7} cm/sec

Table 2 - Hydraulic Conductivity Test Results of Green Diamond, S-1

Sample	% Relative Compaction Uncorrected (D1557)	Dry Unit Weight	Remolded Moisture Content	Hydraulic Conductivity
Green Diamond, S-1	90.3	99.2 pcf	19.8%	2.3×10^{-6} cm/sec
	95.0	103.4 pcf	19.8%	6.9×10^{-8} cm/sec

CLOSURE: Experience has shown that test values on soil and other natural materials vary with each representative sample. As such, HWA has no knowledge as to the extent and quantity of material the tested samples may represent. HWA also makes no warranty as to how representative either the samples tested, or the test results obtained, are to actual field conditions. It is a well-established fact that sampling methods present varying degrees of disturbance that affect sample representativeness.

No copy should be made of this report except in its entirety.

We appreciate the opportunity to provide laboratory testing services on this project. Should you have any questions or comments, or if we may be of further service, please call.

HWA GEOSCIENCES INC.

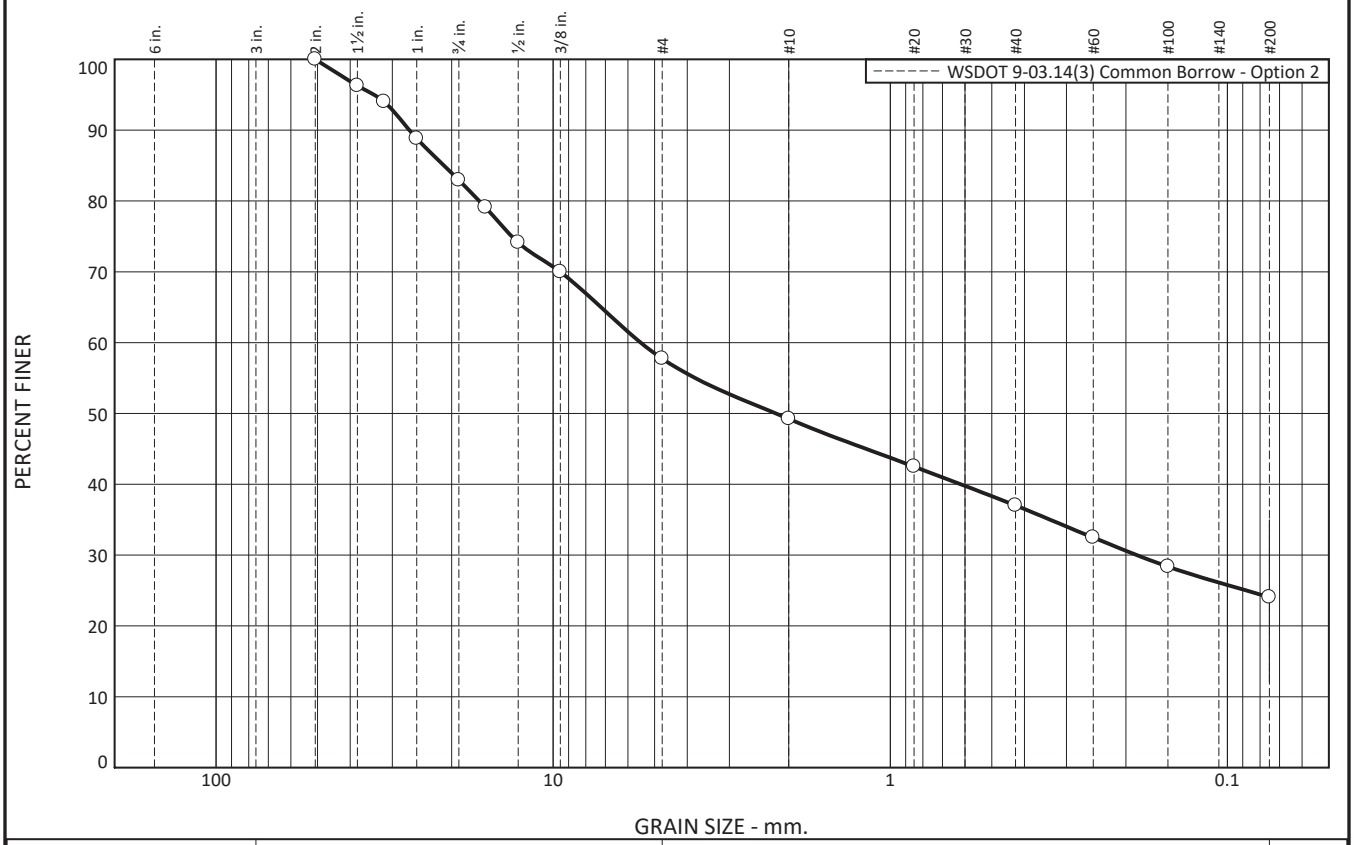
Alex Hodges
Materials Laboratory Supervisor

Steven E. Greene, L.G., L.E.G.
Engineering Geologist
Vice President

Attachments:

Figures 1-2	Particle Size Distribution Report
Figures 3-4	Compaction Test Report
Figures 5-8	Hydraulic Conductivity Test Report

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0	17	25	9	12	13	24

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100		
1-1/2"	96		
1-1/4"	94		
1"	89		
3/4"	83		
5/8"	79		
1/2"	74		
3/8"	70		
#4	58		
#10	49		
#20	42		
#40	37		
#60	32		
#100	28		
#200	24	12.1-35	

* WSDOT 9-03.14(3) Common Borrow - Option 2

Soil Description

Dark reddish-brown, silty GRAVEL with sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 26.7185 D_{85}= 21.0918 D_{60}= 5.4987
D_{50}= 2.1837 D_{30}= 0.1855 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GM AASHTO=

Remarks

Natural Moisture: 18.0%

Source of Sample: Delphi
Sample Number: S-1

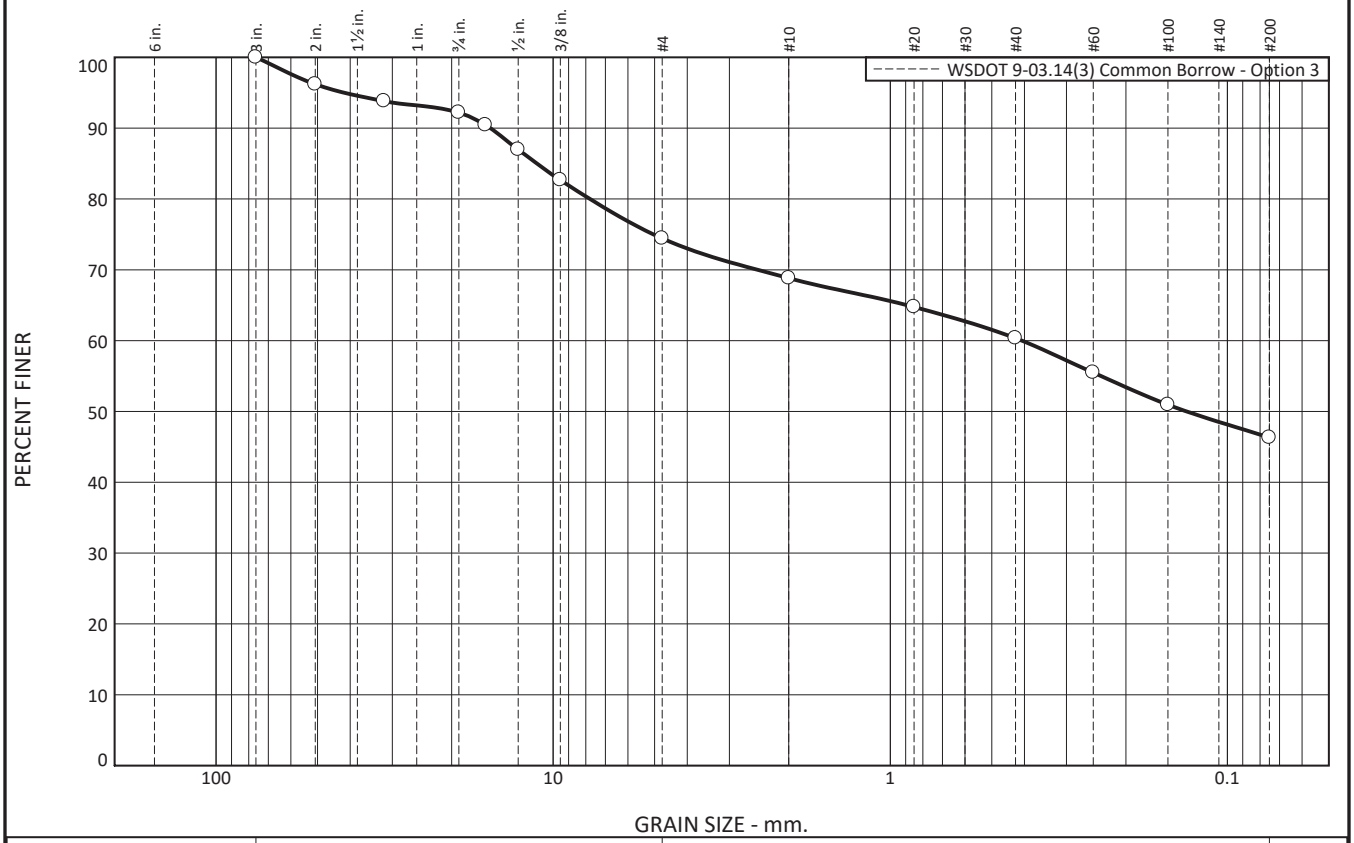
Date: 12/19/2022

HWA GEOSCIENCES INC. DBE/MWBE

Client: Brumfield Construction, Inc.
Project: C Street Landfill
Shelton, WA
Project No: 2022-212 **Figure** 1

Tested By: NJ **Checked By:** SEG

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0	8	18	5	9	14	46

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100		
2"	96		
1-1/4"	94		
3/4"	92		
5/8"	90		
1/2"	87		
3/8"	83		
#4	74		
#10	69		
#20	65		
#40	60		
#60	55		
#100	51		
#200	46	35-100	

* WSDOT 9-03.14(3) Common Borrow - Option 3

Soil Description

Very dark brown, silty SAND with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 15.3551 D_{85}= 11.1755 D_{60}= 0.4071
D_{50}= 0.1321 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Natural Moisture: 31.3%

Source of Sample: Green Diamond
Sample Number: S-1

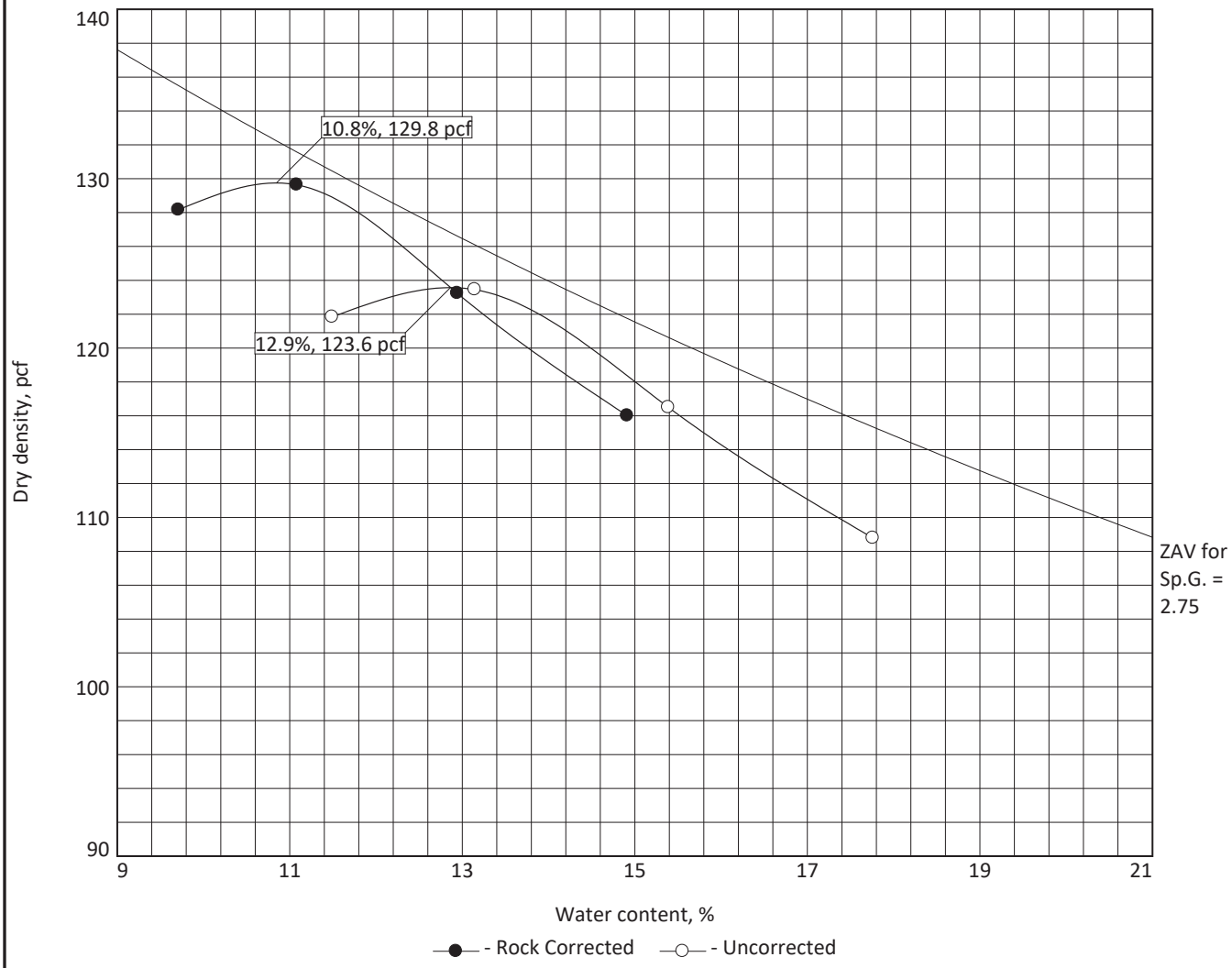
Date: 12/19/2022

GeoSciences Inc. DBE/MWBE

Client: Brumfield Construction, Inc.
Project: C Street Landfill
Shelton, WA
Project No: 2022-212 **Figure** 2

Tested By: NJ **Checked By:** SEG

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	GM		18.0	2.75			17	24

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 129.8 pcf	123.6 pcf	Dark reddish-brown, silty GRAVEL with sand
Optimum moisture = 10.8 %	12.9 %	

Project No. 2022-212 **Client:** Brumfield Construction, Inc.
Project: C Street Landfill
Shelton, WA **Date:** 1/5/2023
○ **Source of Sample:** Delphi **Sample Number:** S-1

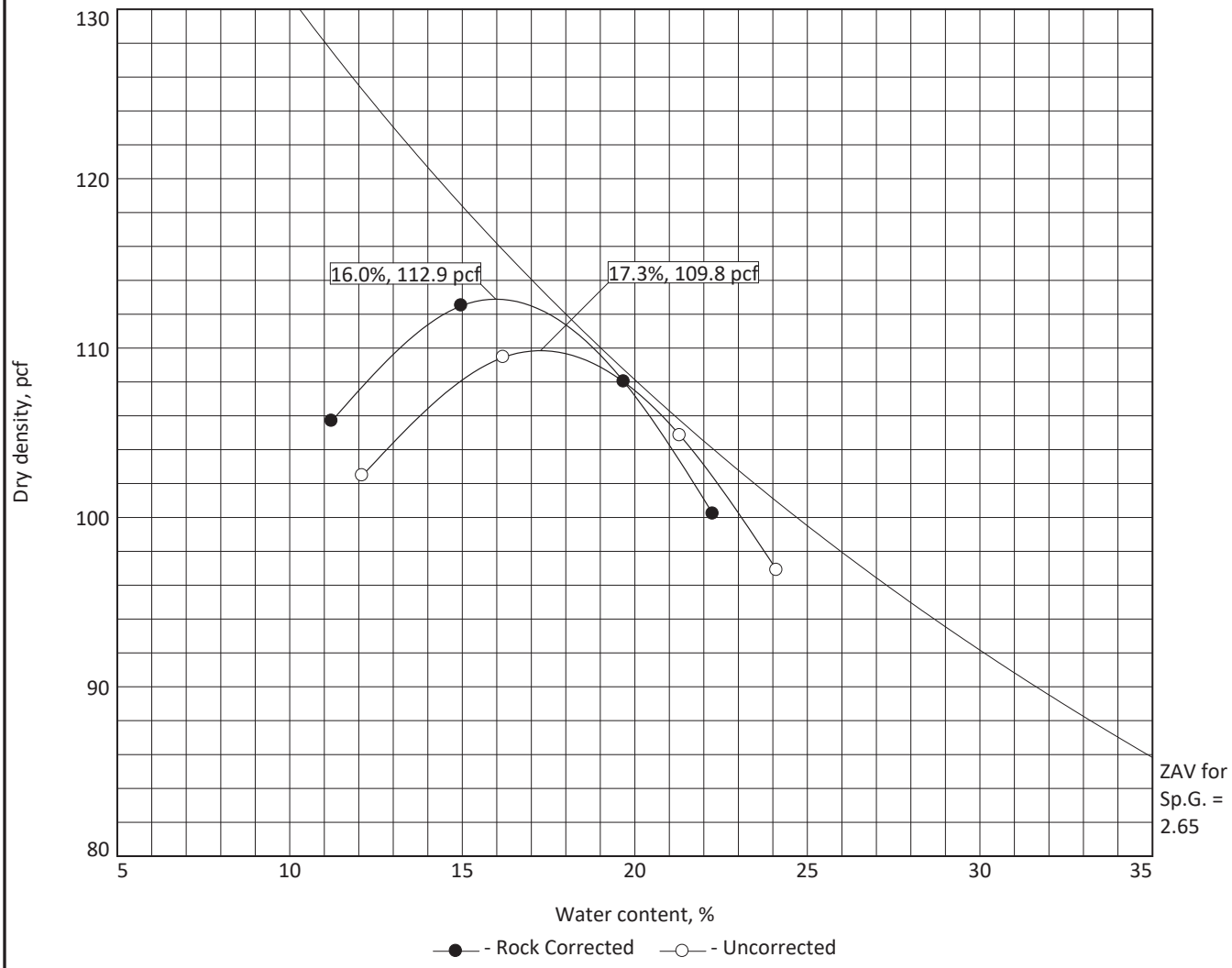
Remarks:
Specific Gravity Assumed

HWA GEOSCIENCES INC. DBE/MWBE

Figure 3

Tested By: NJ **Checked By:** SEG

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	SM		31.3	2.65			8	46

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 112.9 pcf	109.8 pcf	Very dark brown, silty SAND with gravel
Optimum moisture = 16.0 %	17.3 %	

Project No. 2022-212 **Client:** Brumfield Construction, Inc.
Project: C Street Landfill
Shelton, WA **Date:** 1/5/2023
○ **Source of Sample:** Green Diamond **Sample Number:** S-1

Remarks:
Specific Gravity Assumed

HWA GEOSCIENCES INC. DBE/MWBE

Figure 4

Tested By: KN/NJ **Checked By:** SEG

Hydraulic Conductivity Test Report

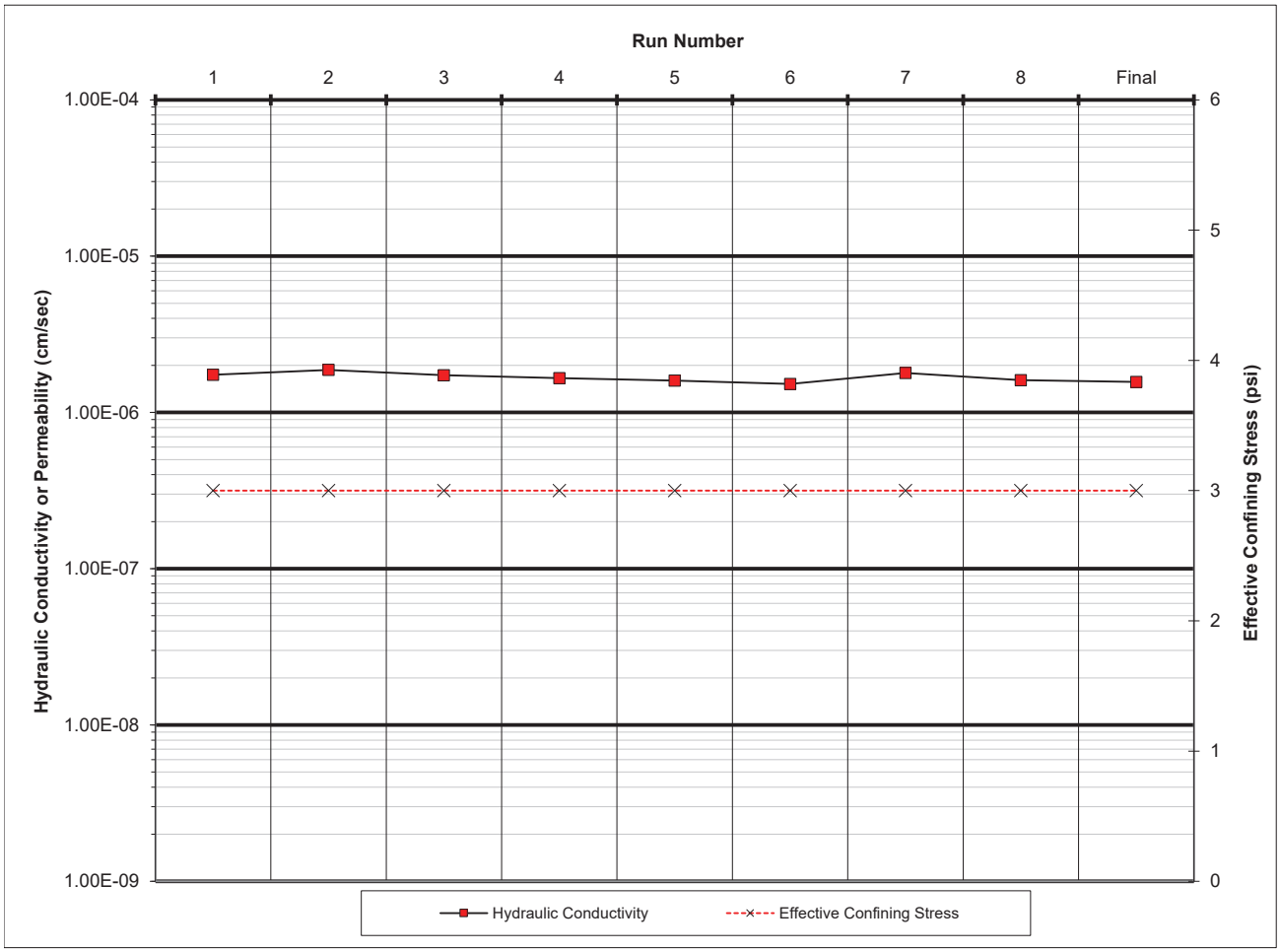
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction Inc.
Project number	2022-212
Date	1/12/2023
Technician	AH
Sample point	Delphi
Sample number	S-1
Sample depth	0
Sample description	Dark reddish-brown, silty GRAVEL with sand

Assumed Specific Gravity	2.65		
Initial Sample Area (cm2)	80.87	Final Sample Area (cm2)	80.64
Initial Sample Length (cm)	11.69	Final Sample Length (cm)	11.70
Initial Sample Volume (cc)	945.2	Final Sample Volume (cc)	943.2
Initial moisture (%)	13.9	Final moisture (%)	17.9
Initial wet unit wt. (pcf)	128.3	Final wet unit weight (pcf)	131.8
Initial dry unit wt. (pcf)	112.7	Final dry unit weight (pcf)	111.8
Initial void ratio	0.467	Final void ratio	0.479
Initial porosity	0.319	Final porosity	0.324
Initial saturation (%)	78.7	Final saturation (%)	99.0

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	1.7E-06	n.a.		0.94	3	Maximum Gradient
2	1.9E-06	n.a.		0.93	3	13.0
3	1.7E-06	n.a.		0.97	3	Minimum Gradient
4	1.7E-06	1.8E-06	6.9%	0.92	3	8.9
5	1.6E-06	1.7E-06	9.1%	0.93	3	Max. Back Pressure (psi)
6	1.5E-06	1.6E-06	6.5%	0.96	3	16.0
7	1.8E-06	1.6E-06	8.9%	1.03	3	Min. Back Pressure (psi)
8	1.6E-06	1.6E-06	9.7%	0.97	3	16.0
Final	1.6E-06	**1.6E-06**	10.2%	0.92	3	



Checked by: SEG

FIGURE: 5

Hydraulic Conductivity Test Report

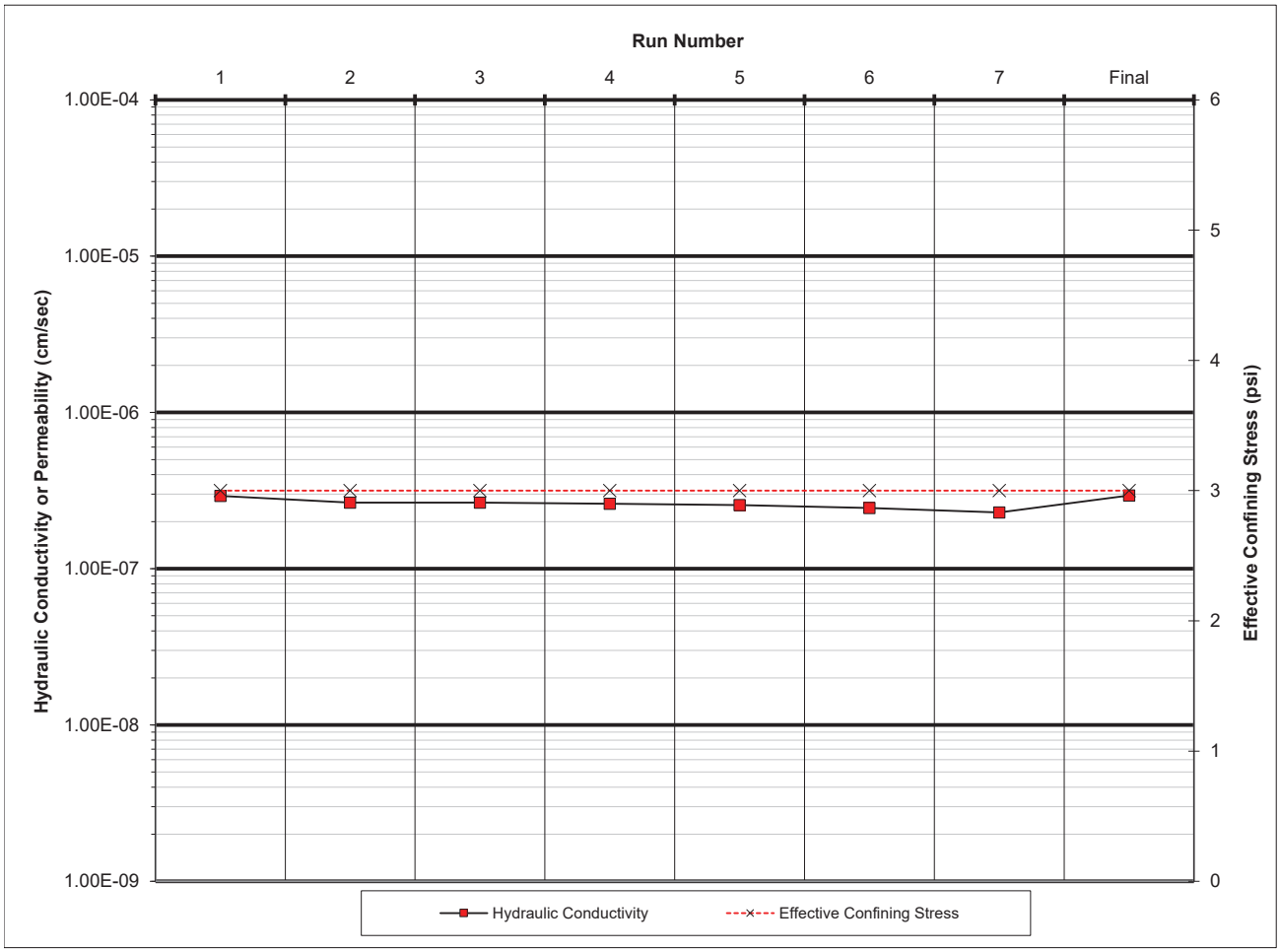
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction Inc.
Project number	2022-212
Date	1/18/2023
Technician	AH
Sample point	Delphi
Sample number	S-1
Sample depth	0
Sample description	Dark reddish-brown, silty GRAVEL with sand

Assumed Specific Gravity	2.65		
Initial Sample Area (cm2)	80.86	Final Sample Area (cm2)	81.29
Initial Sample Length (cm)	11.74	Final Sample Length (cm)	11.74
Initial Sample Volume (cc)	949.0	Final Sample Volume (cc)	954.2
Initial moisture (%)	15.3	Final moisture (%)	16.2
Initial wet unit wt. (pcf)	135.3	Final wet unit weight (pcf)	135.7
Initial dry unit wt. (pcf)	117.4	Final dry unit weight (pcf)	116.8
Initial void ratio	0.409	Final void ratio	0.416
Initial porosity	0.290	Final porosity	0.294
Initial saturation (%)	99.1	Final saturation (%)	103.1

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	2.9E-07	n.a.		1.00	3	Maximum Gradient
2	2.6E-07	n.a.		0.90	3	13.0
3	2.7E-07	n.a.		0.95	3	Minimum Gradient
4	2.6E-07	2.7E-07	8.1%	0.93	3	10.0
5	2.6E-07	2.6E-07	2.3%	0.89	3	Max. Back Pressure (psi)
6	2.5E-07	2.6E-07	4.5%	0.96	3	16.0
7	2.3E-07	2.5E-07	7.4%	0.91	3	Min. Back Pressure (psi)
Final	2.9E-07	**2.6E-07**	15.0%	0.97	3	16.0



Checked by: SEG

FIGURE: 6

Hydraulic Conductivity Test Report

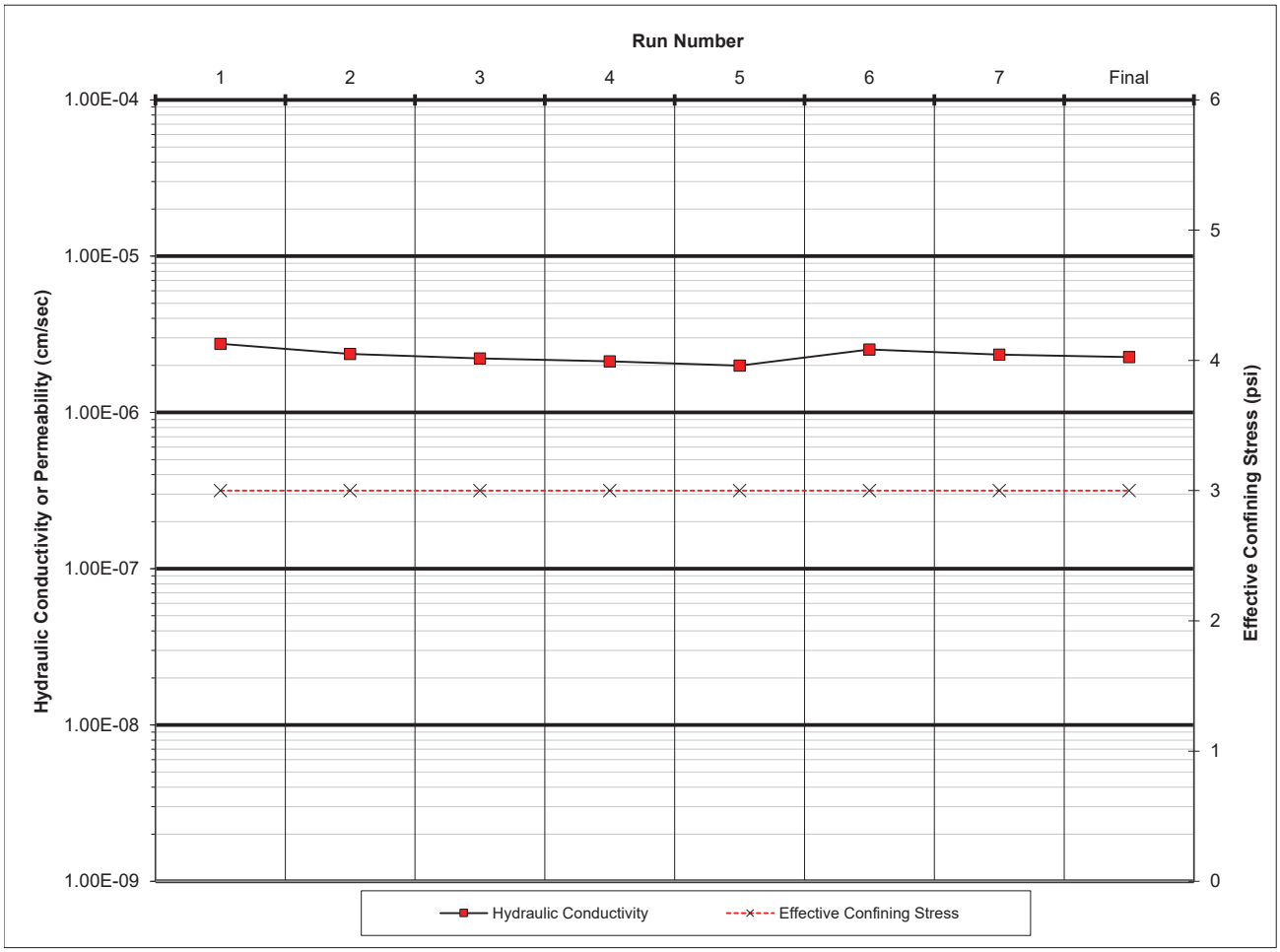
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction Inc.
Project number	2022-212
Date	1/12/2023
Technician	AH
Sample point	Green Diamond
Sample number	S-1
Sample depth	0
Sample description	Very dark brown, silty SAND with gravel

Assumed Specific Gravity	2.65		
Initial Sample Area (cm2)	80.65	Final Sample Area (cm2)	82.42
Initial Sample Length (cm)	11.63	Final Sample Length (cm)	11.71
Initial Sample Volume (cc)	938.3	Final Sample Volume (cc)	965.4
Initial moisture (%)	19.8	Final moisture (%)	25.3
Initial wet unit wt. (pcf)	118.8	Final wet unit weight (pcf)	121.6
Initial dry unit wt. (pcf)	99.2	Final dry unit weight (pcf)	97.1
Initial void ratio	0.667	Final void ratio	0.703
Initial porosity	0.400	Final porosity	0.413
Initial saturation (%)	78.6	Final saturation (%)	95.3

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	2.8E-06	n.a.		0.86	3	Maximum Gradient
2	2.4E-06	n.a.		0.92	3	13.0
3	2.2E-06	n.a.		0.90	3	Minimum Gradient
4	2.1E-06	2.4E-06	16.3%	0.89	3	9.1
5	2.0E-06	2.2E-06	8.9%	0.86	3	Max. Back Pressure (psi)
6	2.5E-06	2.2E-06	14.2%	0.92	3	16.0
7	2.3E-06	2.2E-06	12.6%	0.90	3	Min. Back Pressure (psi)
Final	2.3E-06	**2.3E-06**	12.7%	0.89	3	16.0



Checked by: SEG

FIGURE: 7

Hydraulic Conductivity Test Report

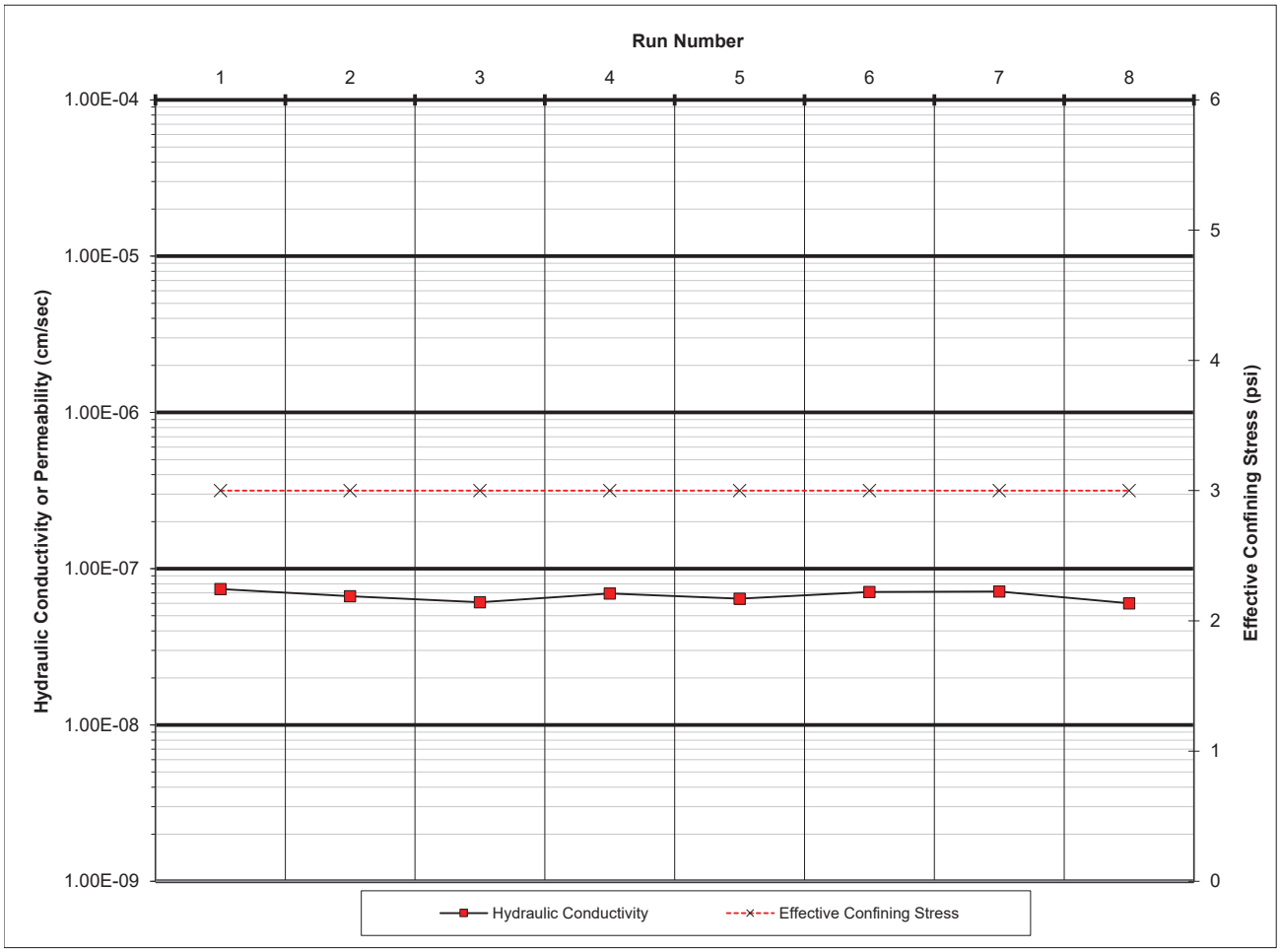
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction Inc.
Project number	2022-212
Date	1/18/2023
Technician	AH
Sample point	Green Diamond
Sample number	S-1
Sample depth	0
Sample description	Very dark brown, silty SAND with gravel

Assumed Specific Gravity	2.65		
Initial Sample Area (cm2)	81.11	Final Sample Area (cm2)	82.23
Initial Sample Length (cm)	11.73	Final Sample Length (cm)	11.79
Initial Sample Volume (cc)	951.5	Final Sample Volume (cc)	969.6
Initial moisture (%)	19.8	Final moisture (%)	23.5
Initial wet unit wt. (pcf)	123.9	Final wet unit weight (pcf)	124.7
Initial dry unit wt. (pcf)	103.4	Final dry unit weight (pcf)	100.9
Initial void ratio	0.599	Final void ratio	0.638
Initial porosity	0.374	Final porosity	0.390
Initial saturation (%)	87.5	Final saturation (%)	97.6

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	7.4E-08	n.a.		1.00	3	Maximum Gradient
2	6.7E-08	n.a.		0.87	3	12.9
3	6.1E-08	n.a.		0.80	3	Minimum Gradient
4	6.9E-08	6.8E-08	10.1%	1.00	3	12.2
5	6.4E-08	6.5E-08	6.7%	0.87	3	Max. Back Pressure (psi)
6	7.1E-08	6.6E-08	8.2%	0.78	3	16.0
7	7.2E-08	6.9E-08	7.0%	1.00	3	Min. Back Pressure (psi)
8	6.0E-08	6.7E-08	10.0%	1.00	3	16.0
Final	7.2E-08	**6.9E-08**	12.5%	1.00	3	



Checked by: SEG

FIGURE: 8

HWA GeoSciences Inc.
DBE/MWBE

May 22, 2023
HWA Project No. 2022-212-23 Task 100

Brumfield Construction, Inc.
2007 Westport Road
PO Box 600
Aberdeen WA, 98520

Attention: Mr. Josh Franzke

Subject: **Materials Laboratory Report**
C Street Landfill
Shelton, WA

Dear Mr. Franzke:

In accordance with your request, HWA GeoSciences Inc. (HWA) performed laboratory testing for the above referenced project. Herein we present the results of our laboratory analyses, which are summarized on the attached Figure and following table. The laboratory testing program was performed in general accordance with your instructions and appropriate ASTM Standards as outlined below.

SAMPLE DESCRIPTION: Nine samples were delivered to our laboratory on May 8 and May 11, 2023 by Brumfield Construction personnel. The samples were contained in nine 5-gallon buckets (one bucket per sample). The sample identifications were designated by lab personnel. The natural moisture content was obtained for each sample and oversize material was scalped off to classify oversize particles. The samples were identified using visual-manual classification and are listed in the table below:

Sample ID	Classification	Moisture Content %	% Retained on 3/4"
S-1	Dark yellowish-brown, silty SAND with gravel	23.8	12
S-2	Dark brown, silty SAND with gravel	21.9	16
S-3	Dark brown, silty SAND with gravel	18.8	26
S-4	Dark brown, silty SAND with gravel	19.0	13

Sample ID	Classification	Moisture Content	% Retained on 3/4"
S-5	Dark brown, silty SAND with gravel	15.2	19
S-6	Dark brown, silty SAND with gravel	21.9	15
S-7	Dark brown, silty GRAVEL with sand and cobbles	16.1	39
S-8	Dark brown, silty GRAVEL with sand and cobbles	14.5	53
S-9	Dark brown, silty GRAVEL with sand and cobbles	17.0	47

LABORATORY COMPACTION CHARACTERISTICS OF SOIL (PROCTOR TEST): The samples were tested using method ASTM D1557 (Modified Proctor) Method C. All of the samples delivered were split down to representative portions that were then recombined to produce a composite test sample. The test was performed on the portion of the sample passing ¾", as required by the test procedure. The maximum dry density and optimum moisture content result have been corrected for the average amount of over-sized material on all samples using method ASTM D4718. The test results are summarized on the attached Compaction Test report, Figure 1.

CLOSURE: Experience has shown that test values on soil and other natural materials vary with each representative sample. As such, HWA has no knowledge as to the extent and quantity of material the tested samples may represent. HWA also makes no warranty as to how representative either the samples tested, or the test results obtained, are to actual field conditions. It is a well-established fact that sampling methods present varying degrees of disturbance that affect sample representativeness.

No copy should be made of this report except in its entirety.

We appreciate the opportunity to provide laboratory testing services on this project. Should you have any questions or comments, or if we may be of further service, please call.

HWA GEOSCIENCES INC.

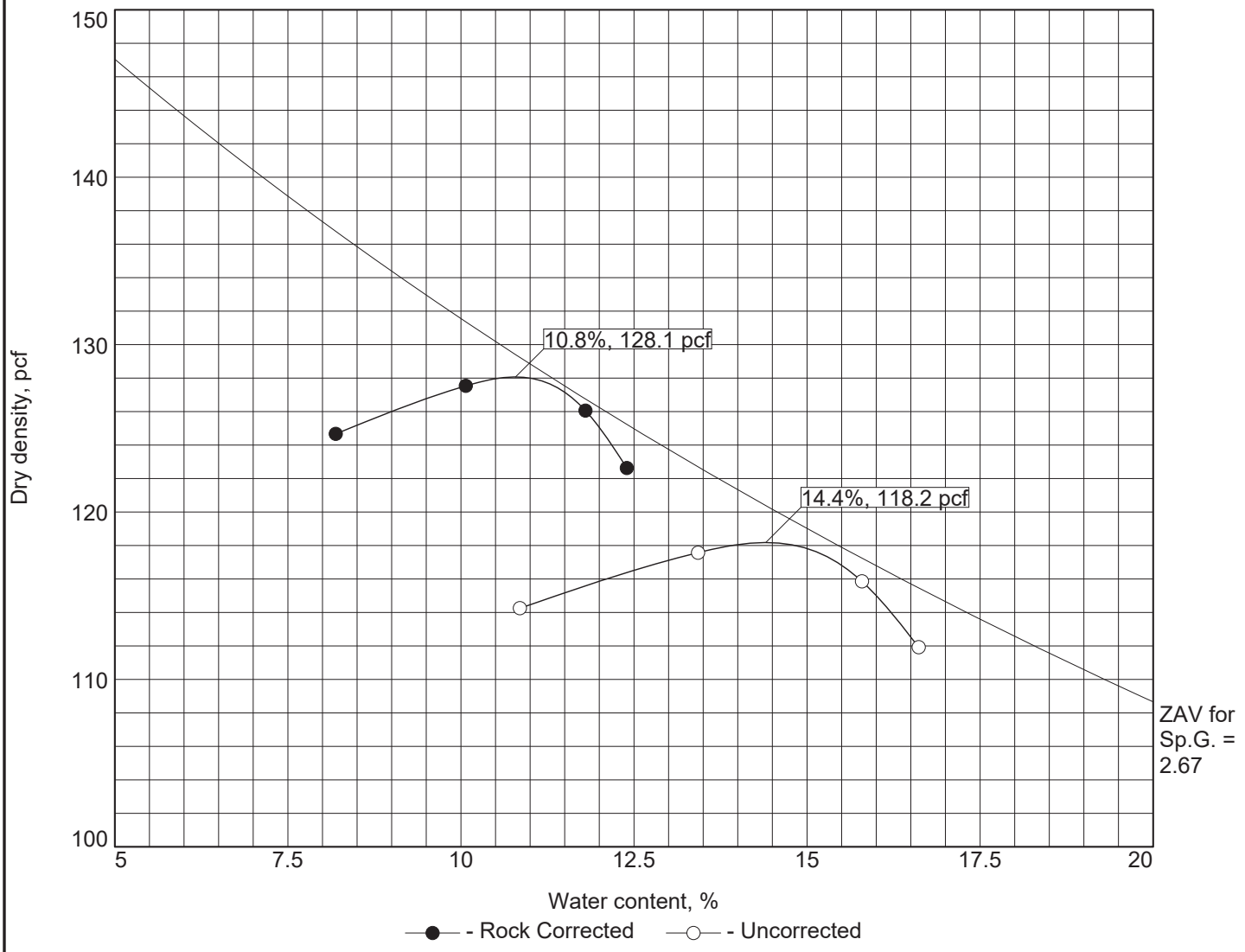
Alex Hodges
Materials Laboratory Supervisor

Steven E. Greene, L.G., L.E.G.
Engineering Geologist
Vice President

Attachments:

Figure 1 Compaction Test Report

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	SM		18.7	2.67			27	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 128.1 pcf	118.2 pcf	Dark brown, silty SAND with gravel and cobbles
Optimum moisture = 10.8 %	14.4 %	

Project No. 2022-212 **Client:** Brumfield Construction, Inc.
Project: C Street Landfill
Shelton, WA **Date:** 5/15/2023
○ **Source of Sample:** Delphi **Sample Number:** Composite

Remarks:
Specific Gravity Assumed

HWA GEOSCIENCES INC. DBE/MWBE

Figure 1

Tested By: NJ **Checked By:** SEG

HWA GeoSciences Inc.
DBE/MWBE

May 26, 2023
HWA Project No. 2022-212-23 Task 100

Brumfield Construction, Inc.
2007 Westport Road
PO Box 600
Aberdeen WA, 98520

Attention: Mr. Josh Franzke

Subject: **Materials Laboratory Report**
C Street Landfill
Shelton, WA

Dear Mr. Franzke:

In accordance with your request, HWA GeoSciences Inc. (HWA) performed laboratory testing for the above referenced project. Herein we present the results of our laboratory analyses, which are summarized on the attached Figures and following Tables. The laboratory testing program was performed in general accordance with your instructions and appropriate ASTM Standards as outlined below.

SAMPLE DESCRIPTION: Nine samples were delivered to our laboratory on May 8 and May 11, 2023 by Brumfield Construction personnel. The samples were contained in nine 5-gallon buckets (one bucket per sample). The sample identifications were designated by lab personnel. The natural moisture content was obtained for each sample and oversize material (+3/4") was scalped off to classify oversize particles. The samples were identified using visual-manual classification and are listed in Table 1 below:

Table 1 – Sample Characteristics

Sample	Classification	Moisture Content %	% Retained on ¾"
S-1	Dark yellowish-brown, silty SAND with gravel	23.8	12
S-2	Dark brown, silty SAND with gravel	21.9	16
S-3	Dark brown, silty SAND with gravel	18.8	26

Sample	Classification	Moisture Content %	% Retained on ¾”
S-4	Dark brown, silty SAND with gravel	19.0	13
S-5	Dark brown, silty SAND with gravel	15.2	19
S-6	Dark brown, silty SAND with gravel	21.9	15
S-7	Dark brown, silty GRAVEL with sand and cobbles	16.1	39
S-8	Dark brown, silty GRAVEL with sand and cobbles	14.5	53
S-9	Dark brown, silty GRAVEL with sand and cobbles	17.0	47

LABORATORY COMPACTION CHARACTERISTICS OF SOIL (PROCTOR TEST): The samples were tested using method ASTM D1557 (Modified Proctor) Method C. All of the samples delivered were split down to representative portions that were then recombined to produce a composite test sample. The test was performed on the portion of the sample passing ¾”, as required by the test procedure. The maximum dry density and optimum moisture content result have been corrected for the average amount of over-sized material on all samples using method ASTM D4718. The test results are summarized on the attached Compaction Test report, Figure 1.

HYDRAULIC CONDUCTIVITY OF SOIL (FLEXI-WALL TRIAXIAL CHAMBER METHOD): The hydraulic conductivity (also commonly referred to as coefficient of permeability) of the samples was measured in general accordance with method ASTM D5084. Testing was conducted on the minus ¾-inch fraction of each sample remolded to a target density of 95% of the uncorrected maximum dry density determined for the composite sample at approximately optimum moisture content. Test samples were de-molded and weighed prior to placement within a flexible membrane within a triaxial pressure chamber. An effective confining pressure of 3 psi was applied. Testing was conducted until inflow was approximately equal to outflow and the hydraulic conductivity was essentially steady. A summary of the results is presented below in Table 2. The test results are presented in detail on the attached Hydraulic Conductivity Test Report, Figures 2 through 10.

Table 2 - Hydraulic Conductivity Test Results

Sample	% Relative Compaction Uncorrected (D1557)	Dry Unit Weight (pcf)	Remolded Moisture Content	Hydraulic Conductivity
S-1	95.4	112.8	17.3 %	3.7×10^{-8} cm/s
S-2	95.3	112.6	16.7 %	5.2×10^{-8} cm/s
S-3	95.1	112.4	15.7 %	6.4×10^{-8} cm/s
S-4	95.2	112.5	15.5 %	5.6×10^{-8} cm/s
S-5	95.8	113.2	14.0 %	2.6×10^{-7} cm/s
S-6	95.1	112.4	14.7 %	4.4×10^{-8} cm/s
S-7	95.3	112.6	16.3 %	1.1×10^{-7} cm/s
S-8	95.6	113.0	16.0 %	4.3×10^{-7} cm/s
S-9	95.2	112.5	16.4 %	2.3×10^{-7} cm/s

CLOSURE: Experience has shown that test values on soil and other natural materials vary with each representative sample. As such, HWA has no knowledge as to the extent and quantity of material the tested samples may represent. HWA also makes no warranty as to how representative either the samples tested, or the test results obtained, are to actual field conditions. It is a well-established fact that sampling methods present varying degrees of disturbance that affect sample representativeness.

No copy should be made of this report except in its entirety.

We appreciate the opportunity to provide laboratory testing services on this project. Should you have any questions or comments, or if we may be of further service, please call.

HWA GEOSCIENCES INC.

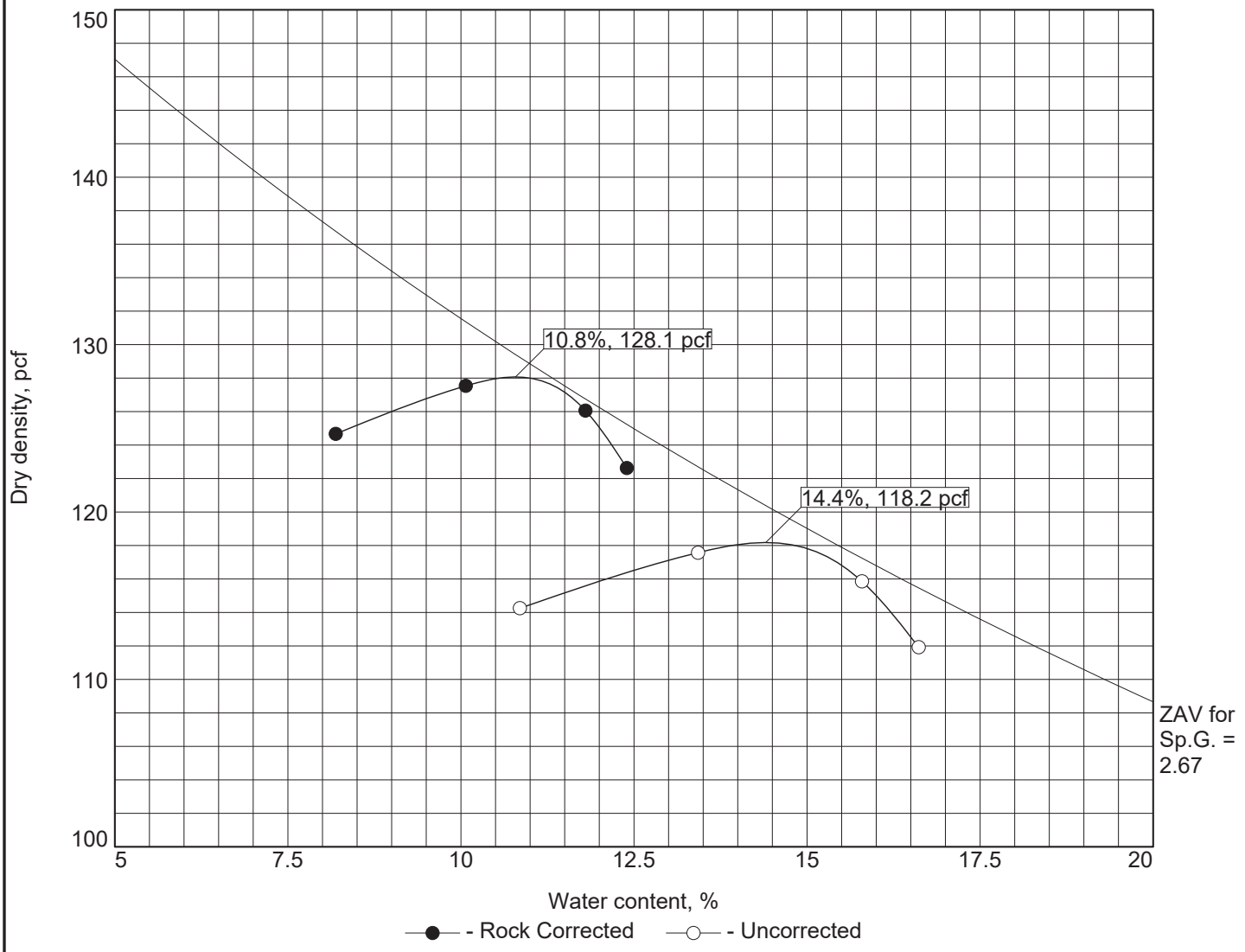
Alex Hodges
Materials Laboratory Supervisor

Steven E. Greene, L.G., L.E.G.
Engineering Geologist
Vice President

Attachments:

Figure 1	Compaction Test Report
Figures 2-10	Hydraulic Conductivity Test Report

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	SM		18.7	2.67			27	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 128.1 pcf	118.2 pcf	Dark brown, silty SAND with gravel and cobbles
Optimum moisture = 10.8 %	14.4 %	

Project No. 2022-212 **Client:** Brumfield Construction, Inc.
Project: C Street Landfill
Shelton, WA **Date:** 5/15/2023
○ **Source of Sample:** Delphi **Sample Number:** Composite

Remarks:
Specific Gravity Assumed

HWA GEOSCIENCES INC. DBE/MWBE

Figure 1

Tested By: NJ **Checked By:** SEG

Hydraulic Conductivity Test Report

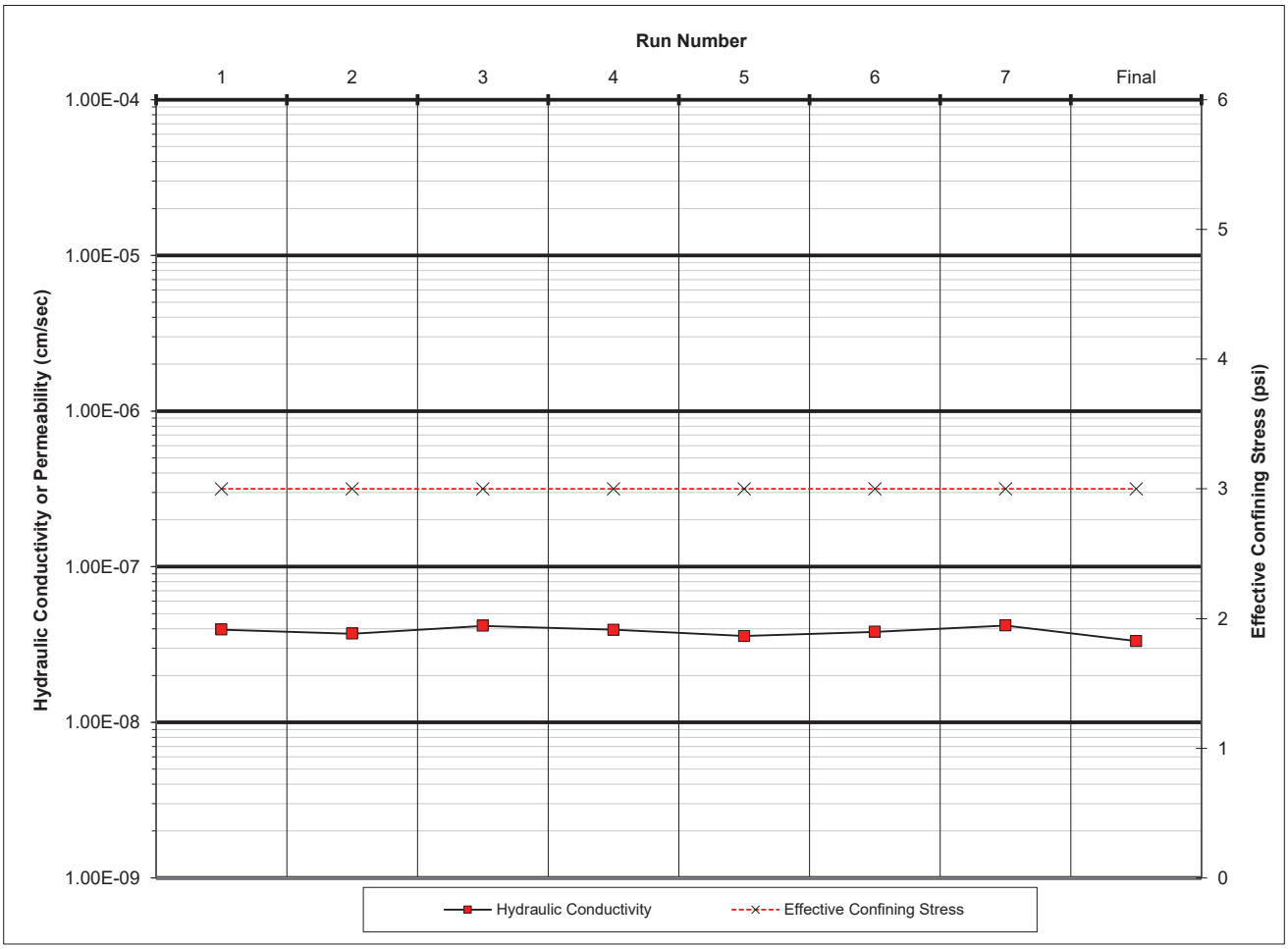
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction Inc.
Project number	2022-212
Date	5/23/2023
Technician	AH
Sample point	Delphi
Sample number	S-1
Sample depth	0
Sample description	Dark yellowish-brown, silty SAND with gravel

Assumed Specific Gravity	2.67		
Initial Sample Area (cm2)	81.17	Final Sample Area (cm2)	81.68
Initial Sample Length (cm)	11.66	Final Sample Length (cm)	11.73
Initial Sample Volume (cc)	946.7	Final Sample Volume (cc)	958.5
Initial moisture (%)	17.3	Final moisture (%)	20.9
Initial wet unit wt. (pcf)	132.3	Final wet unit weight (pcf)	131.5
Initial dry unit wt. (pcf)	112.8	Final dry unit weight (pcf)	108.8
Initial void ratio	0.477	Final void ratio	0.532
Initial porosity	0.323	Final porosity	0.347
Initial saturation (%)	96.6	Final saturation (%)	105.0

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	3.9E-08	n.a.		0.80	3	Maximum Gradient
2	3.7E-08	n.a.		0.87	3	13.0
3	4.2E-08	n.a.		1.00	3	Minimum Gradient
4	3.9E-08	3.9E-08	5.9%	1.00	3	12.2
5	3.6E-08	3.8E-08	8.4%	1.00	3	Max. Back Pressure (psi)
6	3.8E-08	3.9E-08	7.6%	0.86	3	16.0
7	4.2E-08	3.9E-08	7.9%	1.00	3	Min. Back Pressure (psi)
Final	3.3E-08	**3.7E-08**	12.2%	1.09	3	16.0



Checked by: SEG

FIGURE: 2

Hydraulic Conductivity Test Report

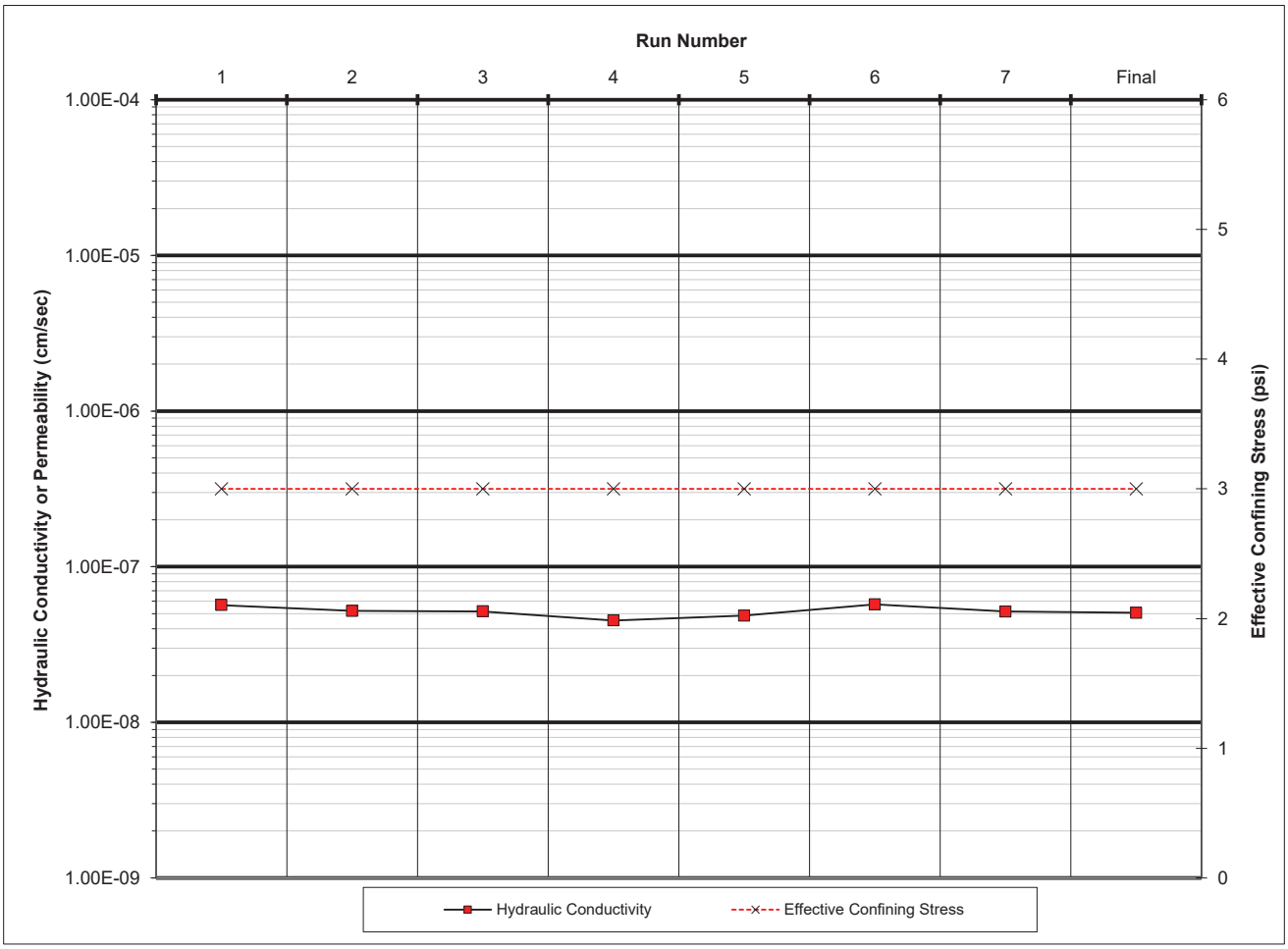
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction, Inc.
Project number	2022-212
Date	5/25/2023
Technician	AH
Sample point	Delphi
Sample number	S-2
Sample depth	0
Sample description	Dark brown, silty SAND with gravel

Assumed Specific Gravity	2.67		
Initial Sample Area (cm2)	80.94	Final Sample Area (cm2)	81.19
Initial Sample Length (cm)	11.68	Final Sample Length (cm)	11.79
Initial Sample Volume (cc)	945.3	Final Sample Volume (cc)	957.3
Initial moisture (%)	16.7	Final moisture (%)	21.8
Initial wet unit wt. (pcf)	131.4	Final wet unit weight (pcf)	130.4
Initial dry unit wt. (pcf)	112.6	Final dry unit weight (pcf)	107.0
Initial void ratio	0.479	Final void ratio	0.557
Initial porosity	0.324	Final porosity	0.358
Initial saturation (%)	92.9	Final saturation (%)	104.7

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	5.7E-08	n.a.		0.75	3	Maximum Gradient
2	5.2E-08	n.a.		0.77	3	12.9
3	5.2E-08	n.a.		0.83	3	Minimum Gradient
4	4.5E-08	5.1E-08	12.2%	1.00	3	11.9
5	4.8E-08	4.9E-08	8.6%	0.91	3	Max. Back Pressure (psi)
6	5.7E-08	5.1E-08	13.1%	1.00	3	16.0
7	5.1E-08	5.1E-08	13.2%	1.00	3	Min. Back Pressure (psi)
Final	5.1E-08	**5.2E-08**	10.2%	0.75	3	16.0



Checked by: SEG

FIGURE: 3

Hydraulic Conductivity Test Report

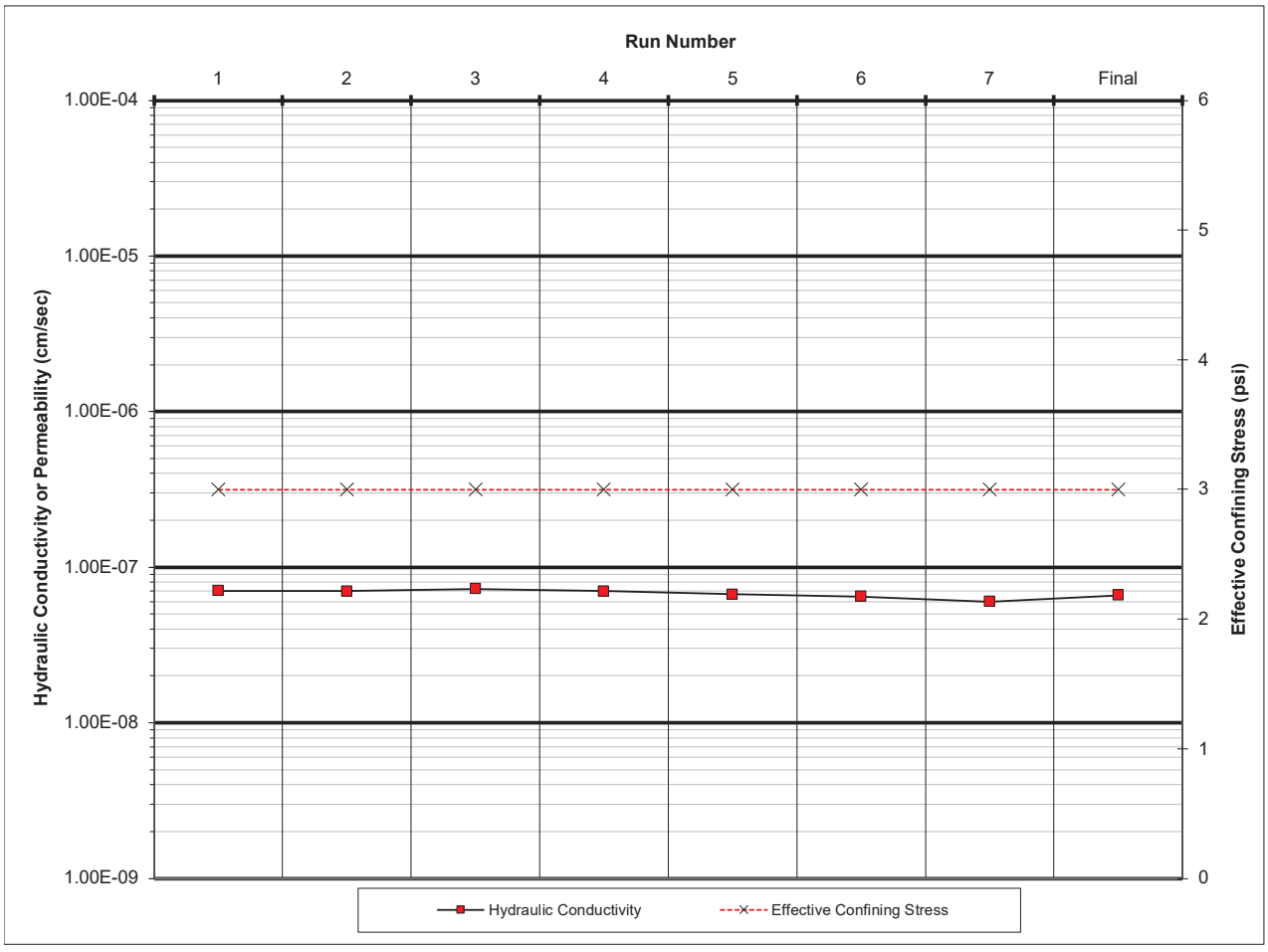
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction, Inc.
Project number	2022-212
Date	5/25/2023
Technician	AH
Sample point	Delphi
Sample number	S-3
Sample depth	0
Sample description	Dark brown, silty SAND with gravel

Assumed Specific Gravity	2.65		
Initial Sample Area (cm2)	81.06	Final Sample Area (cm2)	81.56
Initial Sample Length (cm)	11.77	Final Sample Length (cm)	11.78
Initial Sample Volume (cc)	954.0	Final Sample Volume (cc)	960.4
Initial moisture (%)	15.7	Final moisture (%)	18.3
Initial wet unit wt. (pcf)	130.1	Final wet unit weight (pcf)	131.7
Initial dry unit wt. (pcf)	112.4	Final dry unit weight (pcf)	111.3
Initial void ratio	0.471	Final void ratio	0.485
Initial porosity	0.320	Final porosity	0.327
Initial saturation (%)	88.4	Final saturation (%)	99.9

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	7.0E-08	n.a.		0.80	3	Maximum Gradient
2	7.0E-08	n.a.		0.80	3	12.9
3	7.2E-08	n.a.		1.00	3	Minimum Gradient
4	7.0E-08	7.1E-08	2.3%	0.80	3	11.6
5	6.7E-08	7.0E-08	4.2%	0.97	3	Max. Back Pressure (psi)
6	6.5E-08	6.9E-08	5.5%	0.87	3	16.0
7	6.0E-08	6.6E-08	7.9%	0.79	3	Min. Back Pressure (psi)
Final	6.6E-08	**6.4E-08**	6.5%	0.86	3	16.0



Checked by: SEG

FIGURE: 4

Hydraulic Conductivity Test Report

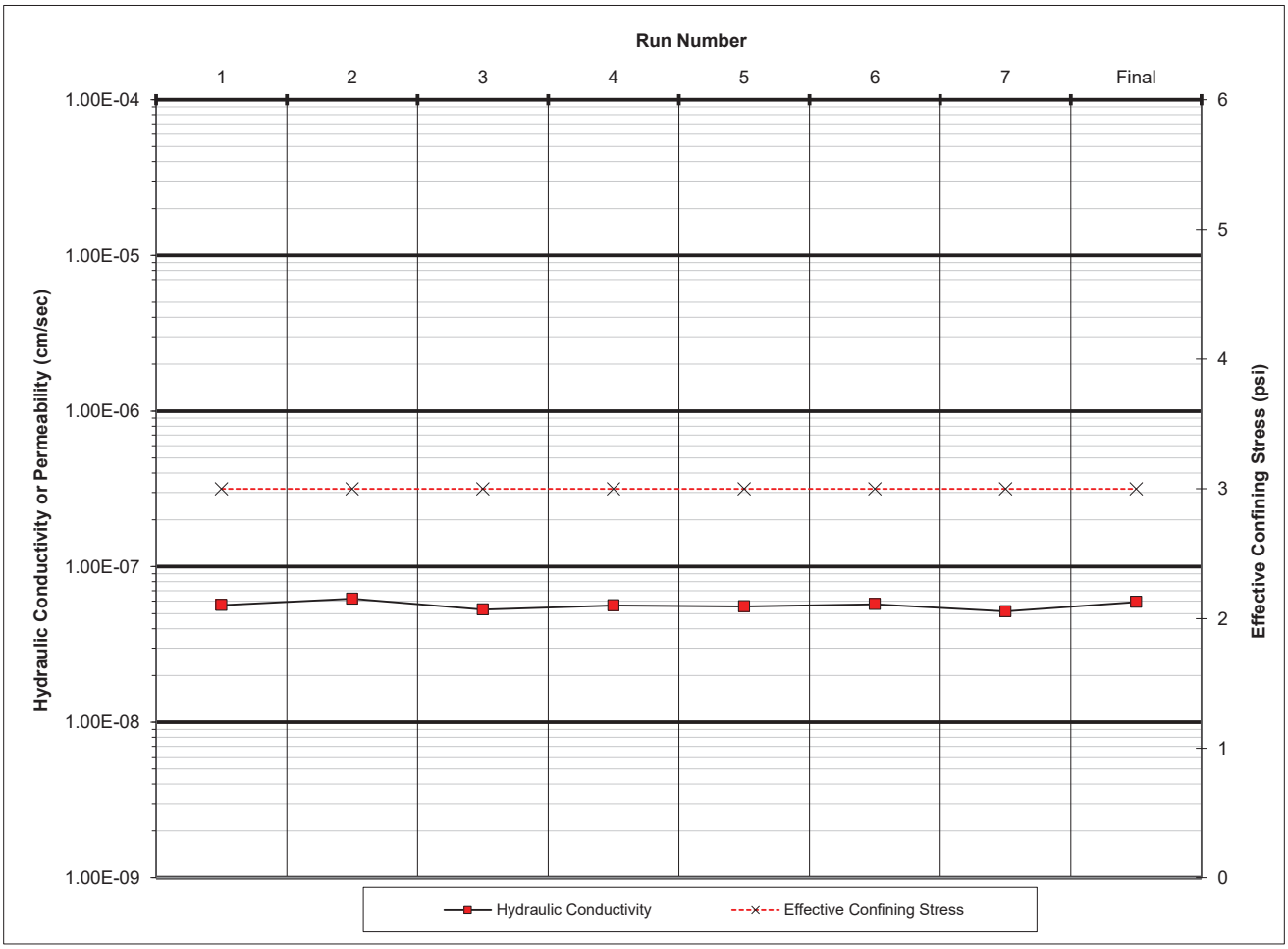
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction, Inc.
Project number	2022-212
Date	5/23/2023
Technician	AH
Sample point	Delphi
Sample number	S-4
Sample depth	0
Sample description	Dark brown, silty SAND with gravel

Assumed Specific Gravity	2.67		
Initial Sample Area (cm2)	81.13	Final Sample Area (cm2)	81.80
Initial Sample Length (cm)	11.80	Final Sample Length (cm)	11.82
Initial Sample Volume (cc)	957.4	Final Sample Volume (cc)	967.2
Initial moisture (%)	15.5	Final moisture (%)	19.1
Initial wet unit wt. (pcf)	129.9	Final wet unit weight (pcf)	130.8
Initial dry unit wt. (pcf)	112.5	Final dry unit weight (pcf)	109.9
Initial void ratio	0.481	Final void ratio	0.517
Initial porosity	0.325	Final porosity	0.341
Initial saturation (%)	85.8	Final saturation (%)	98.6

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	5.7E-08	n.a.		0.80	3	Maximum Gradient
2	6.2E-08	n.a.		1.00	3	12.9
3	5.3E-08	n.a.		1.00	3	Minimum Gradient
4	5.6E-08	5.7E-08	9.1%	1.00	3	11.0
5	5.6E-08	5.7E-08	9.6%	0.92	3	Max. Back Pressure (psi)
6	5.7E-08	5.6E-08	4.6%	0.86	3	16.0
7	5.2E-08	5.5E-08	6.6%	0.79	3	Min. Back Pressure (psi)
Final	5.9E-08	**5.6E-08**	7.8%	0.83	3	16.0



Checked by: SEG

FIGURE: 5

Hydraulic Conductivity Test Report

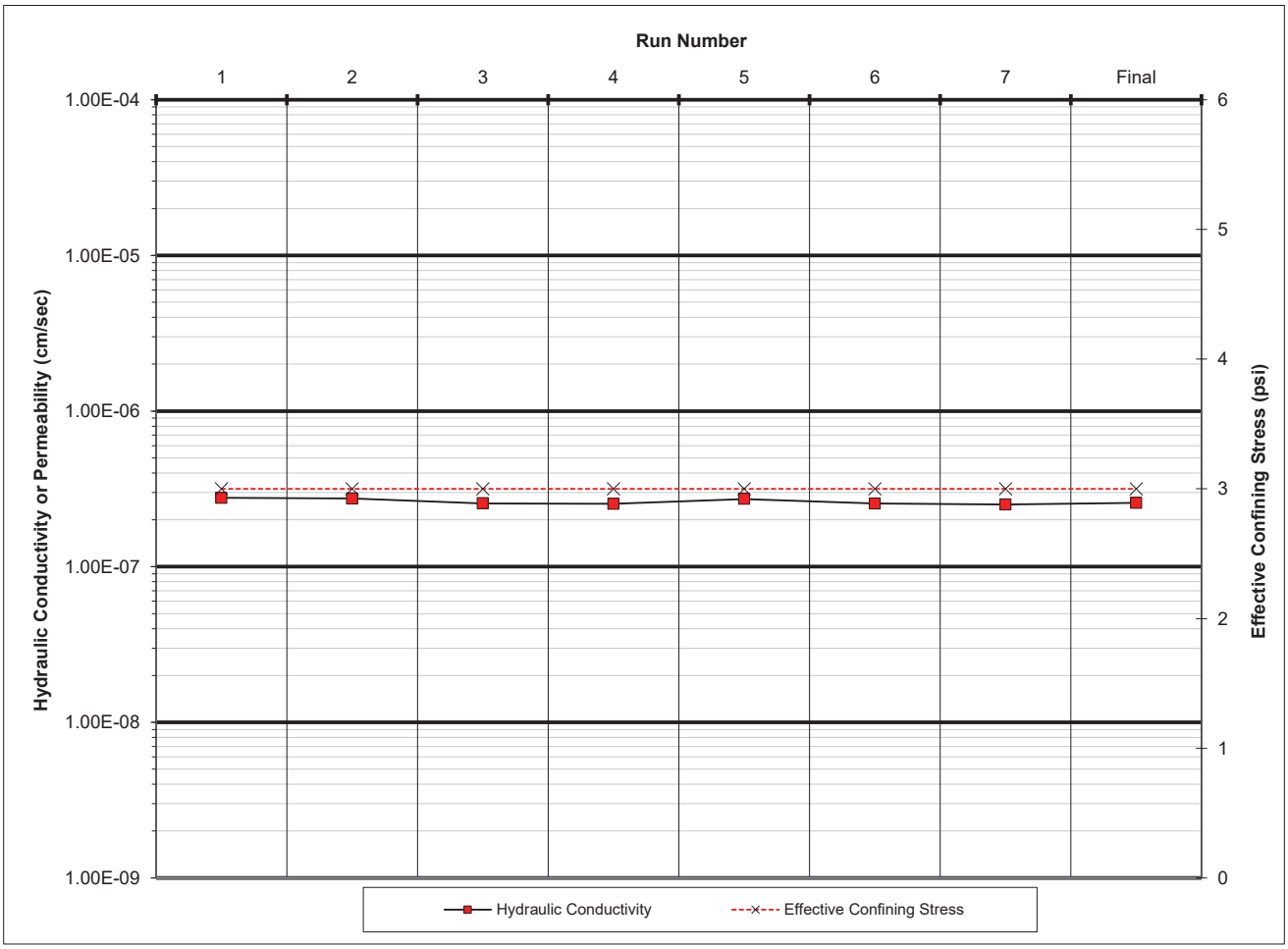
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction, Inc.
Project number	2022-212
Date	5/18/2023
Technician	AH
Sample point	Delphi
Sample number	S-5
Sample depth	0
Sample description	Dark brown, silty SAND with gravel

Assumed Specific Gravity	2.67		
Initial Sample Area (cm2)	81.01	Final Sample Area (cm2)	82.38
Initial Sample Length (cm)	11.70	Final Sample Length (cm)	11.74
Initial Sample Volume (cc)	947.8	Final Sample Volume (cc)	967.2
Initial moisture (%)	14.0	Final moisture (%)	18.5
Initial wet unit wt. (pcf)	129.0	Final wet unit weight (pcf)	132.2
Initial dry unit wt. (pcf)	113.2	Final dry unit weight (pcf)	111.6
Initial void ratio	0.472	Final void ratio	0.494
Initial porosity	0.321	Final porosity	0.330
Initial saturation (%)	79.0	Final saturation (%)	100.0

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	2.8E-07	n.a.		1.00	3	Maximum Gradient
2	2.7E-07	n.a.		0.95	3	13.0
3	2.6E-07	n.a.		0.91	3	Minimum Gradient
4	2.5E-07	2.6E-07	4.6%	0.91	3	10.7
5	2.7E-07	2.6E-07	4.0%	1.00	3	Max. Back Pressure (psi)
6	2.5E-07	2.6E-07	5.2%	0.93	3	16.0
7	2.5E-07	2.6E-07	5.6%	1.00	3	Min. Back Pressure (psi)
Final	2.6E-07	**2.6E-07**	5.2%	1.00	3	16.0



Checked by: SEG

FIGURE: 6

Hydraulic Conductivity Test Report

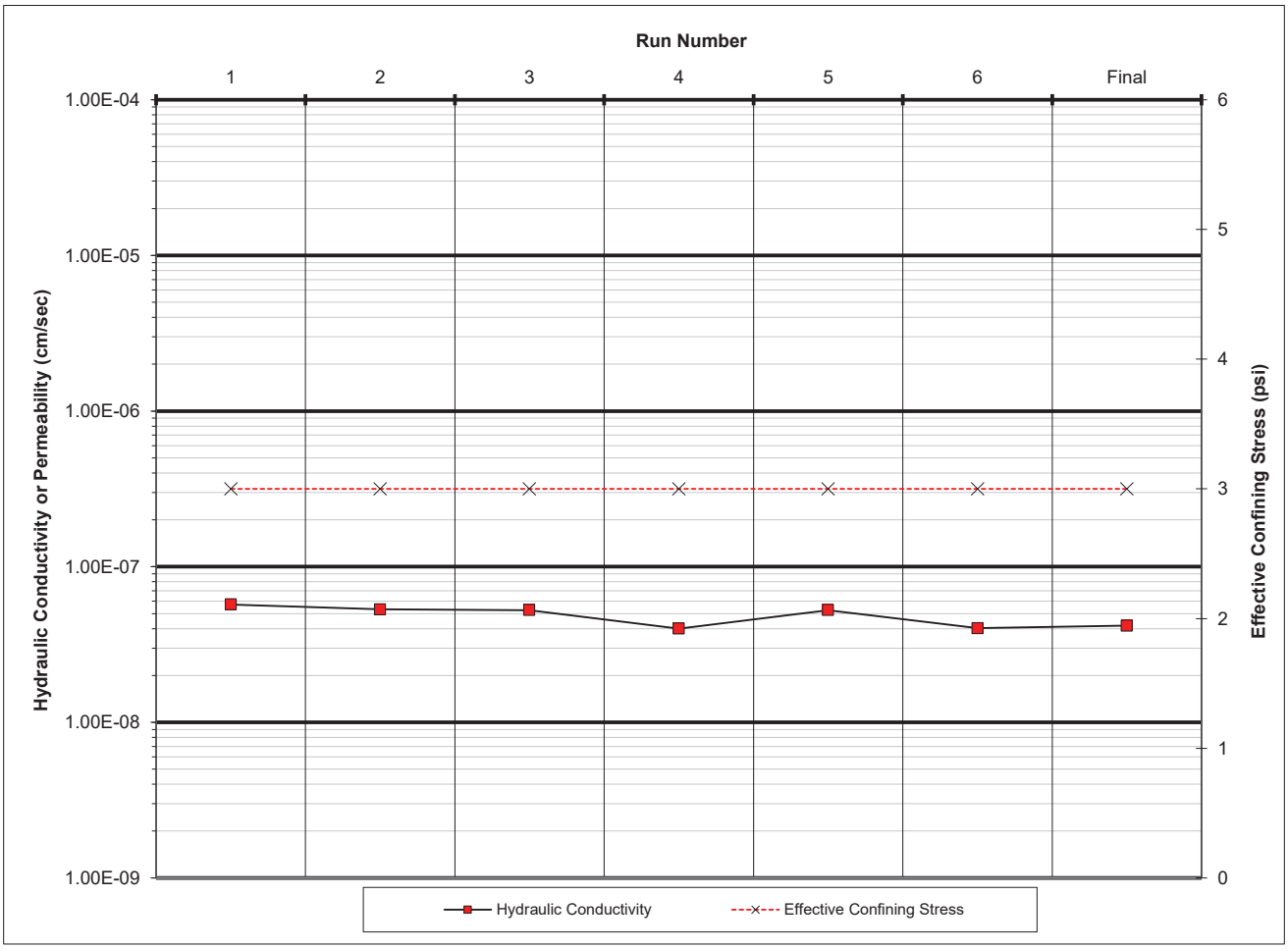
Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill
Client	Brumfield Construction, Inc.
Project number	2022-212
Date	5/25/2023
Technician	AH
Sample point	Delphi
Sample number	S-6
Sample depth	0
Sample description	Dark brown, silty SAND with gravel

Assumed Specific Gravity	2.67		
Initial Sample Area (cm2)	81.41	Final Sample Area (cm2)	82.70
Initial Sample Length (cm)	11.69	Final Sample Length (cm)	11.85
Initial Sample Volume (cc)	951.7	Final Sample Volume (cc)	979.7
Initial moisture (%)	14.7	Final moisture (%)	21.2
Initial wet unit wt. (pcf)	129.0	Final wet unit weight (pcf)	130.1
Initial dry unit wt. (pcf)	112.4	Final dry unit weight (pcf)	107.3
Initial void ratio	0.482	Final void ratio	0.552
Initial porosity	0.325	Final porosity	0.356
Initial saturation (%)	81.7	Final saturation (%)	102.4

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	5.7E-08	n.a.		0.80	3	Maximum Gradient 12.9
2	5.3E-08	n.a.		0.80	3	
3	5.3E-08	n.a.		1.03	3	Minimum Gradient 11.9
4	4.0E-08	5.1E-08	21.2%	1.00	3	
5	5.3E-08	5.0E-08	19.4%	1.00	3	Max. Back Pressure (psi) 16.0
6	4.0E-08	4.6E-08	13.7%	1.00	3	
Final	4.2E-08	**4.4E-08**	20.5%	1.00	3	Min. Back Pressure (psi) 16.0



Checked by: SEG

FIGURE: 7

Hydraulic Conductivity Test Report

Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill	Assumed Specific Gravity	2.67		
Client	Brumfield Construction, Inc.	Initial Sample Area (cm2)	81.18	Final Sample Area (cm2)	81.11
Project number	2022-212	Initial Sample Length (cm)	11.69	Final Sample Length (cm)	11.70
Date	5/23/2023	Initial Sample Volume (cc)	949.2	Final Sample Volume (cc)	948.6
Technician	AH	Initial moisture (%)	16.3	Final moisture (%)	16.6
Sample point	Delphi	Initial wet unit wt. (pcf)	130.9	Final wet unit weight (pcf)	133.0
Sample number	S-7	Initial dry unit wt. (pcf)	112.6	Final dry unit weight (pcf)	114.1
Sample depth	0	Initial void ratio	0.480	Final void ratio	0.461
Sample description	Dark brown, silty GRAVEL with sand and cobbles	Initial porosity	0.324	Final porosity	0.315
		Initial saturation (%)	90.5	Final saturation (%)	96.4

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	1.1E-07	n.a.		0.92	3	Maximum Gradient
2	1.2E-07	n.a.		1.00	3	13.0
3	1.1E-07	n.a.		1.00	3	Minimum Gradient
4	9.9E-08	1.1E-07	11.0%	0.75	3	12.2
5	1.0E-07	1.1E-07	13.5%	1.00	3	Max. Back Pressure (psi)
6	1.1E-07	1.0E-07	4.6%	1.00	3	16.0
7	1.0E-07	1.0E-07	3.3%	1.00	3	Min. Back Pressure (psi)
Final	1.2E-07	**1.1E-07**	8.8%	1.00	3	16.0

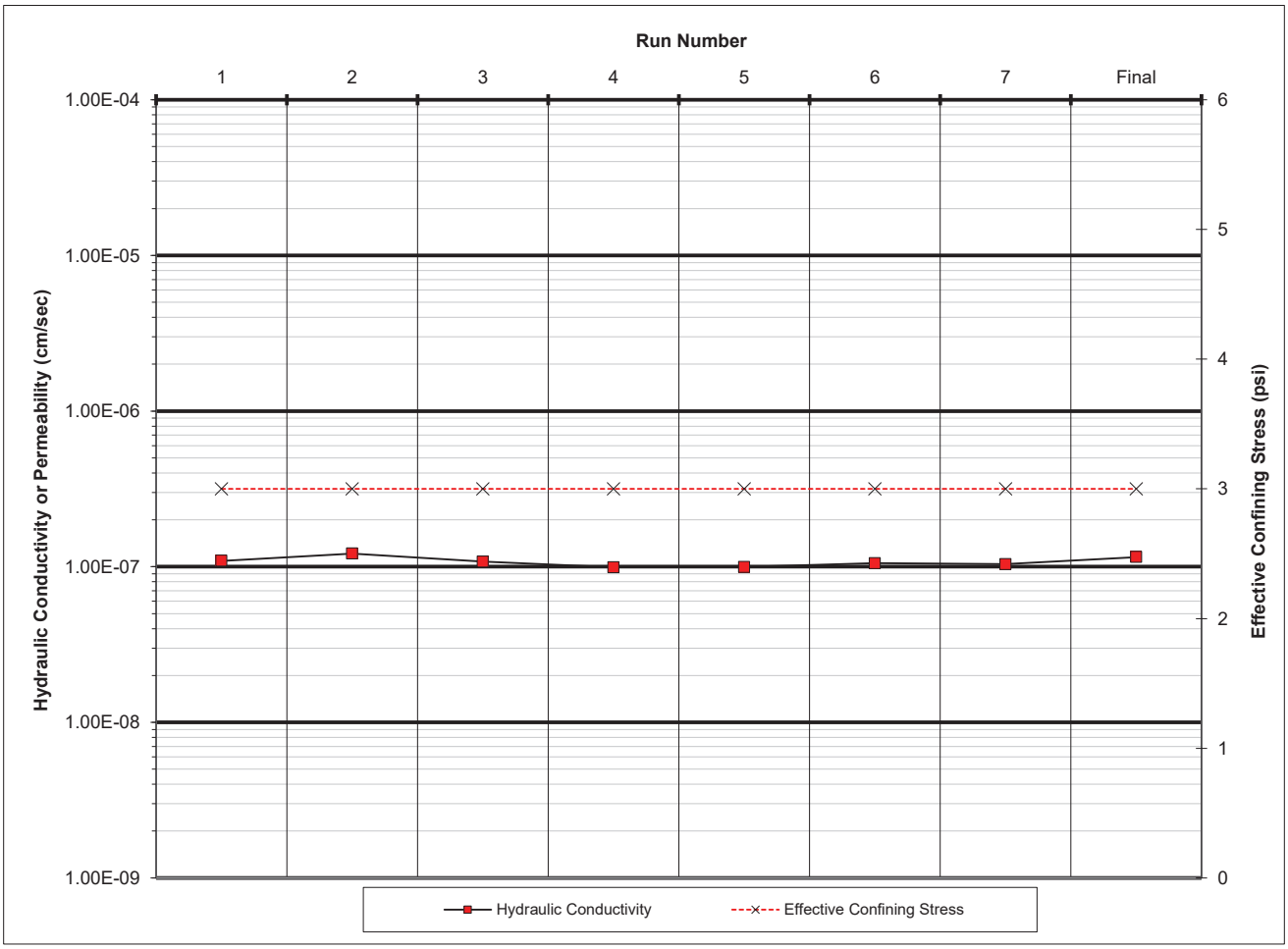


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FIGURE: 8

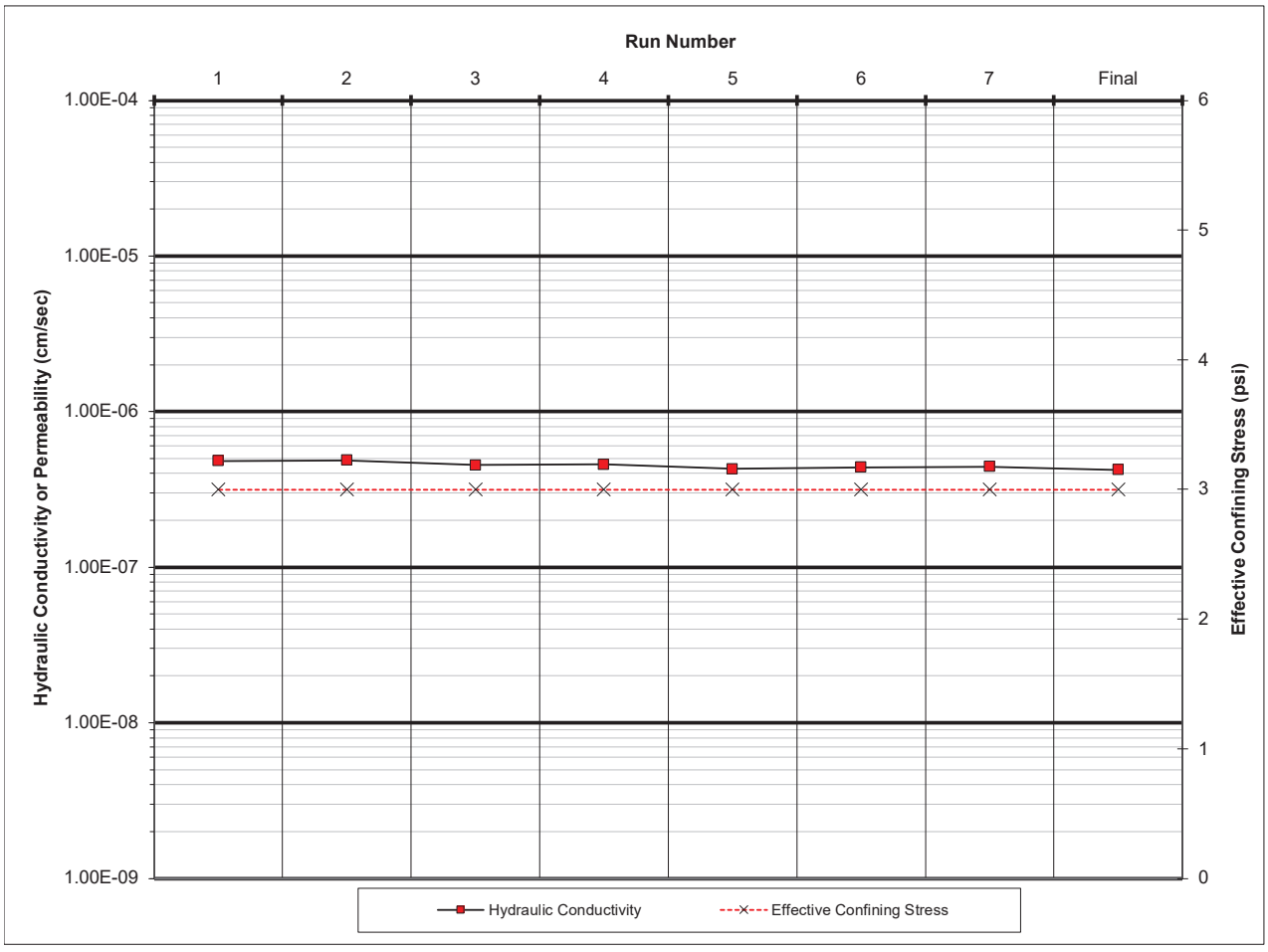
Hydraulic Conductivity Test Report

Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill	Assumed Specific Gravity	2.67		
Client	Brumfield Construction, Inc.	Initial Sample Area (cm2)	80.64	Final Sample Area (cm2)	81.45
Project number	2022-212	Initial Sample Length (cm)	11.73	Final Sample Length (cm)	11.72
Date	5/19/2023	Initial Sample Volume (cc)	945.8	Final Sample Volume (cc)	954.9
Technician	AH	Initial moisture (%)	16.0	Final moisture (%)	18.8
Sample point	Delphi	Initial wet unit wt. (pcf)	131.1	Final wet unit weight (pcf)	133.1
Sample number	S-8	Initial dry unit wt. (pcf)	113.0	Final dry unit weight (pcf)	112.0
Sample depth	0	Initial void ratio	0.475	Final void ratio	0.487
Sample description	Dark brown, silty GRAVEL with sand and cobbles	Initial porosity	0.322	Final porosity	0.328
		Initial saturation (%)	90.1	Final saturation (%)	102.8

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	4.8E-07	n.a.		0.87	3	Maximum Gradient
2	4.9E-07	n.a.		1.00	3	13.0
3	4.5E-07	n.a.		1.00	3	Minimum Gradient
4	4.6E-07	4.7E-07	3.5%	0.99	3	10.3
5	4.3E-07	4.6E-07	6.5%	1.00	3	Max. Back Pressure (psi)
6	4.4E-07	4.4E-07	3.5%	1.00	3	16.0
7	4.4E-07	4.4E-07	3.5%	1.00	3	Min. Back Pressure (psi)
Final	4.2E-07	**4.3E-07**	2.6%	1.00	3	16.0



Checked by: SEG

FIGURE: 9

Hydraulic Conductivity Test Report

Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	C Street Landfill	Assumed Specific Gravity	2.67		
Client	Brumfield Inc.	Initial Sample Area (cm2)	81.18	Final Sample Area (cm2)	81.02
Project number	2022-212	Initial Sample Length (cm)	11.69	Final Sample Length (cm)	11.71
Date	5/22/2023	Initial Sample Volume (cc)	948.7	Final Sample Volume (cc)	949.0
Technician	AH	Initial moisture (%)	16.4	Final moisture (%)	18.9
Sample point	Delphi	Initial wet unit wt. (pcf)	131.0	Final wet unit weight (pcf)	133.3
Sample number	S-9	Initial dry unit wt. (pcf)	112.5	Final dry unit weight (pcf)	112.2
Sample depth	0	Initial void ratio	0.481	Final void ratio	0.485
Sample description	Dark brown, silty GRAVEL with sand and cobbles	Initial porosity	0.325	Final porosity	0.327
		Initial saturation (%)	91.2	Final saturation (%)	103.8

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	2.7E-07	n.a.		0.96	3	Maximum Gradient
2	2.7E-07	n.a.		1.00	3	13.0
3	2.5E-07	n.a.		0.94	3	Minimum Gradient
4	2.5E-07	2.6E-07	4.4%	0.89	3	10.8
5	2.3E-07	2.5E-07	9.1%	1.00	3	Max. Back Pressure (psi)
6	2.4E-07	2.4E-07	6.1%	1.00	3	16.0
7	2.4E-07	2.4E-07	5.5%	0.93	3	Min. Back Pressure (psi)
Final	2.1E-07	**2.3E-07**	6.6%	1.00	3	16.0

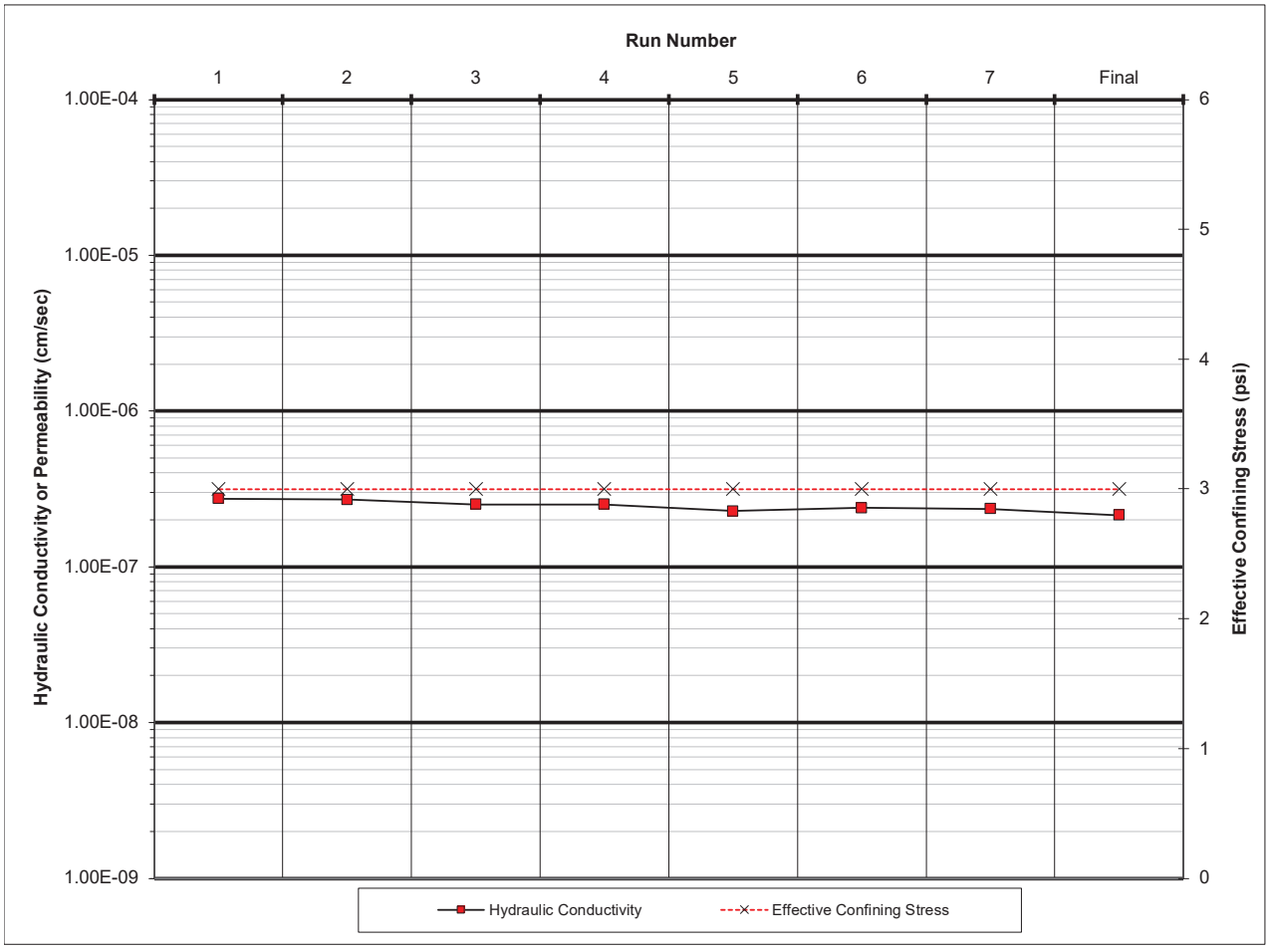


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FIGURE: 10

APPENDIX F

Low Permeability Soil Density Test Reports

C Street Landfill - 23S011-02 - IPD-Soil Compaction: Report #D309477

CLIENT	Brumfield Construction	**DATE**	05/15/2023
PROJECT LOCATION	669 West C Street Shelton WA 98584	**PERMIT #**	

Inspection Information:

Inspection Date: 05/15/2023 **Time Onsite:** 1030 **Weather Conditions:** 90s, sunny

Inspection Performed: IPD-Soil Compaction

Field Data:

Work / Location:	SOUTH EAST CORNER	**Gauge Standard MS:**	708
Equipment ID & Serial #:	Troxler 3440A, Ser. #22152	**Gauge Standard DS:**	1973

Test Samples:

	Sample #:	Description:	Proctor Value(pcf):	Optimum Moisture and Oversize Rock Correction:
1.	Others	GP, POORLY GRADED GRAVEL WITH SAND	128.9	10.8

TEST METHOD ☒ ASTM D-1557 /AASHTO T-180

In Place Density Test Results (ASTM D-6938):

Test #	Mode / Depth	Location of Test	Elev.	Wet Dens.	Dry Dens.	Moist %	Sample #	% Comp.	% Reqd.
1	6"	SEE TEST 1 ON MAP	FSG	143	123	16.3	1	95.4	95

☐ Native Soils	Soils consistent with Proctor	◉ Yes	○ No
☒ Imported Fills	Soils found to be firm and stable; and to the best of our knowledge, meet compaction	◉ Yes	○ No
	Contractor notified of results	◉ Yes	○ No

Remarks:

MTC inspector was met on site by the contractor's geo representative and was instructed to test the imported material used as backfill near the SE corner as shown below.

Area tested were firm and unyielding at the time of inspection. But was over optimum moisture and will need reviewed by engineering firm of record.

Inspector was given a proctor available from another geo laboratory at the time of inspection.

The contractor was notified of the results verbally at that time.

To the best of MTC inspector's knowledge, the above-described work was performed in general accordance with project specifications and approved plans.

Images:

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UPLOADED: 05/15/2023 11:52:48

UPLOADED: 05/15/2023 11:53:47

REPORTED BY: Wes Parnell REVIEWED BY: Michael Houser, Project Manager

C Street Landfill - 23S011-02 - IPD-Soil Compaction: Report #D309789

CLIENT	Brumfield Construction	**DATE**	05/16/2023
PROJECT LOCATION	669 West C Street Shelton WA 98584	**PERMIT #**	

Inspection Information:

Inspection Date: 05/16/2023	**Time Onsite:** 11:00 am	**Weather Conditions:**	sunny 80 degrees F.

Inspection Performed: IPD-Soil Compaction

Field Data:

Work / Location:	Landfill backfill	**Gauge Standard MS:**	1055
Equipment ID & Serial #:	CPN MC-1 Elite, Ser. #MD30831	**Gauge Standard DS:**	3866

Test Samples:

	Sample #:	Description:	Proctor Value(pcf):	Optimum Moisture and Oversize Rock Correction:
1.	others	Poorly graded gravel with sand	128.9	10.8

TEST METHOD ☒ ASTM D-1557 /AASHTO T-180

In Place Density Test Results (ASTM D-6938):

Test #	Mode / Depth	Location of Test	Elev.	Wet Dens.	Dry Dens.	Moist %	Sample #	% Comp.	% Reqd.
1	6	See Photo		139	122.7	13.3	1	95.2	95
2	6	See Photo		138.3	123	12.4	1	95.4	95

☐ Native Soils	Soils consistent with Proctor	◉ Yes	○ No
☒ Imported Fills	Soils found to be firm and stable; and to the best of our knowledge, meet compaction	◉ Yes	○ No
	Contractor notified of results	◉ Yes	○ No

Remarks:

MTC Inspector arrived onsite as requested to perform in-place density testing of imported material being used as backfill around the Landfill.

Contractor was placing 10" loose lifts of material on top of geo fabric and compacting it using a sheep's foot.

Areas tested DID meet relative compaction at the time of inspection. Materials were firm and unyielding at the time of inspection. See results below for more details.

Contractor was notified of the results verbaly at that time.

To the best of MTC inspector's knowledge, the above-described work was performed in general accordance with project specifications and approved plans.

Images:

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UPLOADED: 05/18/2023 10:54:44

REPORTED BY: David Peek REVIEWED BY: Michael Houser, Project Manager

C Street Landfill - 23S011-02 - IPD-Soil Compaction: Report #D309780

CLIENT	Brumfield Construction	**DATE**	05/17/2023
PROJECT LOCATION	669 West C Street Shelton WA 98584	**PERMIT #**	

Inspection Information:

Inspection Date: 05/17/2023 **Time Onsite:** 1230 **Weather Conditions:** sunny 80 degrees F.

Inspection Performed: IPD-Soil Compaction

Field Data:

Work / Location: **Gauge Standard MS:** 0

Equipment ID & Serial #: Troxler 3430, Ser. #28205 **Gauge Standard DS:** 0

Test Samples:

Sample #:	Description:	Proctor Value(pcf):	Optimum Moisture and Oversize Rock Correction:
1. others	Poorly graded gravel with sand	128.9	10.8

TEST METHOD ☒ ASTM D-1557 /AASHTO T-180

In Place Density Test Results (ASTM D-6938):

Test #	Mode / Depth	Location of Test	Elev.	Wet Dens.	Dry Dens.	Moist %	Sample #	% Comp.	% Reqd.
1	6"	seew media	BFG	141	126.5	11.5	1	98.1	95
2		see media	BFG	142.2	125.2	13.6	1	97.1	95

☐ Native Soils
☒ Imported Fills

Soils consistent with Proctor	◉ Yes	○ No
Soils found to be firm and stable; and to the best of our knowledge, meet compaction	◉ Yes	○ No
Contractor notified of results	◉ Yes	○ No

Remarks:

MTC inspector was on-site to perform in-place density testing on backfill at a landfill. The contractor placed the material and compacted it using a sheeps foot roller. In place density testing was conducted and the results of those tests are contained in this report. All areas tested DID meet or exceed the minimum compaction requirements of the project.

To the best of MTC inspector's knowledge, the above-described work was performed in general accordance with project specifications and approved plans.

Images:

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REPORTED BY: John Magerstaedt REVIEWED BY: Michael Houser, Project Manager

C Street Landfill - 23S011-02 - IPD-Soil Compaction: Report #D310038

CLIENT	Brumfield Construction	**DATE**	05/22/2023
PROJECT LOCATION	669 West C Street Shelton WA 98584	**PERMIT #**	

Inspection Information:

Inspection Date: 05/22/2023 **Time Onsite:** 1400 **Weather Conditions:** sunny 60 degrees F.

Inspection Performed: IPD-Soil Compaction

Field Data:

Work / Location: Landfill backfill **Gauge Standard MS:** 636

Equipment ID & Serial #: Troxler 3430, Ser. #28205 **Gauge Standard DS:** 1608

Test Samples:

Sample #:	Description:	Proctor Value(pcf):	Optimum Moisture and Oversize Rock Correction:
1. others	Poorly graded gravel with sand	128.1	10.8

TEST METHOD ☒ ASTM D-1557 /AASHTO T-180

In Place Density Test Results (ASTM D-6938):

Test #	Mode / Depth	Location of Test	Elev.	Wet Dens.	Dry Dens.	Moist %	Sample #	% Comp.	% Reqd.
1	8"	SEE TEST 1 ON MAP	-1'BFSG	140.3	123	14.1	1	96	95
2	8"	SEE TEST 2 ON MAP	-1'BFSG	145.2	124.5	16.6	1	97.2	95
3	8"	SEE TEST 3 ON MAP	-1'BFSG	141.3	123.6	14.3	1	96.5	95
4	8"	SEE TEST 4 ON MAP	-1'BFSG	138.8	122	13.8	1	95.2	95
5	6"	SEE TEST 5 ON MAP	-1'BFSG	140.5	121.1	16	1	94.5	95

☐ Native Soils
☒ Imported Fills

Soils consistent with Proctor — ◉ Yes ○ No

Soils found to be firm and stable; and to the best of our knowledge, meet compaction — ◉ Yes ○ No

Contractor notified of results — ◉ Yes ○ No

Remarks:

MTC Inspector arrived onsite as requested and met with Aspect representative onsite to perform in-place density testing of imported material being used as backfill into landfill area.

The contractor was placing material in 10" loose lifts on top of geo fabric and compacting it using a sheep's foot.

In-place Density Tests showed the material placed today DID Meet 95% compaction on tests 1-4 BUT TEST 5 DID NOT meet relative compaction and all tests showed high moisture content. See the results below for more details.

The contractor was notified of the results verbally at that time.

Work in progress. Additional inspection needed.

Images:

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UPLOADED: 05/22/2023 22:24:24

UPLOADED: 05/22/2023 22:24:26

UPLOADED: 05/22/2023 22:28:49

REPORTED BY: Wes Parnell REVIEWED BY: Michael Houser, Project Manager

Environmental ● Geotechnical Engineering ● Special Inspection ● Non-Destructive Testing ● Materials Testing

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C Street Landfill - 23S011-02 - IPD-Soil Compaction: Report #D310311

CLIENT	Brumfield Construction	**DATE**	05/25/2023
PROJECT LOCATION	669 West C Street Shelton WA 98584	**PERMIT #**	

Inspection Information:

Inspection Date: 05/25/2023 **Time Onsite:** 0700 **Weather Conditions:** 50's, Sunny

Inspection Performed: IPD-Soil Compaction

Field Data:

Work / Location:	Landfill backfill	**Gauge Standard MS:**	749
Equipment ID & Serial #:	Instrotek 3500, Ser. #4547	**Gauge Standard DS:**	2681

Test Samples:

	Sample #:	Description:	Proctor Value(pcf):	Optimum Moisture and Oversize Rock Correction:
1.	S23-0525	Poorly graded gravel with sand	133.1	7.2%

TEST METHOD ☒ ASTM D-1557 /AASHTO T-180

In Place Density Test Results (ASTM D-6938):

Test #	Mode / Depth	Location of Test	Elev.	Wet Dens.	Dry Dens.	Moist %	Sample #	% Comp.	% Reqd.
1	6"	See picture below	FSG	141.5	123.8	14.3	1	93	95
2	6"	See picture below	FSG	136.5	119.1	14.6	1	89.5	95
3	6"	See picture below	FSG	131.4	113.7	15.6	1	85.4	95
4	6"	See picture below	FSG	135.3	117.1	15.5	1	88	95
5	6"	See picture below	FSG	140.5	122.4	14.8	1	92	95

☐ Native Soils	Soils consistent with Proctor	◉ Yes	○ No
☒ Imported Fills	Soils found to be firm and stable; and to the best of our knowledge, meet compaction	◉ Yes	○ No
	Contractor notified of results	◉ Yes	○ No

Remarks:

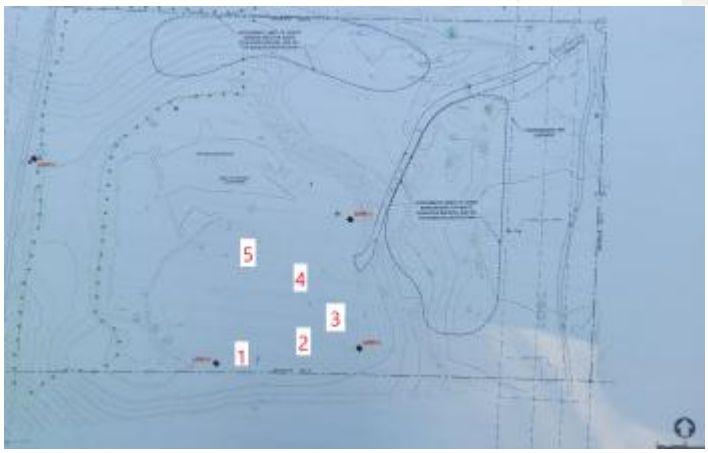
MTC Inspector arrived onsite as requested and met with Aspect representative onsite to perform in-place density testing of imported material being used as backfill into landfill area.

In-place Density Tests showed the material placed today DID NOT meet relative compaction and showed high moisture content. See results below for more details.

The contractor was notified of the results verbally at that time.

Work in progress. Additional inspection needed.

Images:



UPLOADED: 05/25/2023 19:02:10

REPORTED BY: Nicholas Dier REVIEWED BY: Michael Houser, Project Manager

C Street Landfill - 23S011-02 - IPD-Soil Compaction: Report #D310534

CLIENT	Brumfield Construction	**DATE**	05/30/2023
PROJECT LOCATION	669 West C Street Shelton WA 98584	**PERMIT #**	

Inspection Information:

Inspection Date: 05/30/2023 **Time Onsite:** 1315 **Weather Conditions:** sunny 70 degrees F.

Inspection Performed: IPD-Soil Compaction

Field Data:

Work / Location: Landfill as shown below **Gauge Standard MS:** 706

Equipment ID & Serial #: Troxler 3440A, Ser. #22152 **Gauge Standard DS:** 1972

Test Samples:

	Sample #:	Description:	Proctor Value(pcf):	Optimum Moisture and Oversize Rock Correction:
1.	others	Poorly graded gravel with sand	128.1	10.8
2.	S23-0525	POORLY GRADED GRAVEL WITH SAND	133.1	7.2%

TEST METHOD ☒ ASTM D-1557 /AASHTO T-180

In Place Density Test Results (ASTM D-6938):

Test #	Mode / Depth	Location of Test	Elev.	Wet Dens.	Dry Dens.	Moist %	Sample #	% Comp.	% Reqd.
1	6"	SEE TEST 1 ON MAP	FSG	143.6	127.8	12.4	2	96	95
2	6"	SEE TEST 2 ON MAP	FSG	142.9	126	13.4	1	98.4	95
3	6"	SEE TEST 3 ON MAP	FSG	139.3	122.7	13.5	1	95.8	95
4	6"	SEE TEST 4 ON MAP	FSG	140.4	123.8	13.4	1	96.6	95
5	6"	SEE TEST 5 ON MAP	FSG	140.3	122.3	14.7	1	95.5	95
6	6"	SEE TEST 6 ON MAP	FSG	139.7	125.3	11.5	1	97.8	95
7	6"	SEE TEST 7 ON MAP	FSG	145.7	127.6	14.2	2	95.9	95
8	6"	SEE TEST 8 ON MAP	FSG	144.6	126.8	14	2	95.3	95
9	6"	SEE TEST 9 ON MAP	FSG	138.3	122.4	13	1	95.6	95
10	6"	SEE TEST 10 ON MAP	FSG	139.2	123.2	13	1	96.2	95
11	6"	SEE TEST 11 ON MAP	FSG	139.2	122.2	13.9	1	95.4	95

☐ Native Soils
☒ Imported Fills

Soils consistent with Proctor	◉ Yes	○ No
Soils found to be firm and stable; and to the best of our knowledge, meet compaction	◉ Yes	○ No
Contractor notified of results	◉ Yes	○ No

Remarks:

MTC Inspector arrived onsite as requested and met with Aspect representative onsite to perform in-place density testing of imported material being used as backfill into landfill area.

The contractorfinished placing material in compacted lifts ontop of geo fabric, compaction was achieved using a sheep's foot steel drum vibratory roller.

In-place Density Tests showed the material placed prior to inspection DID Meet 95% compaction on tests. All tests showed high moisture content. See the results below for more details.

Moisture will need reviewed by the engineering of record.

The contractor was notified of the results verbally at that time.

Work in progress. Additional inspection needed.

Images:

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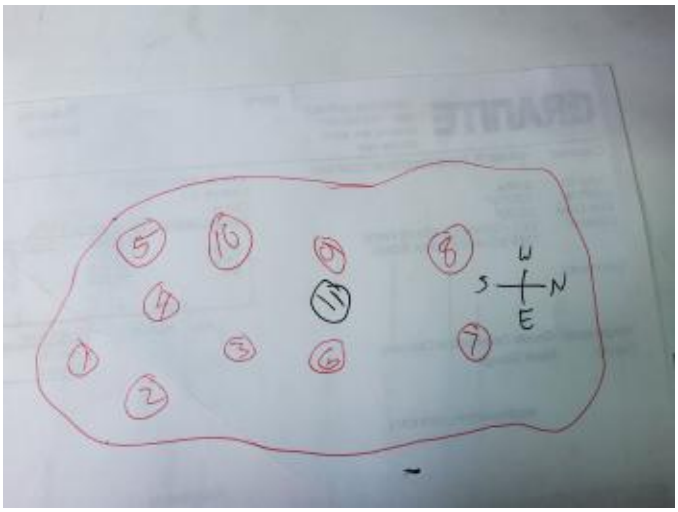

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REPORTED BY: Wes Parnell REVIEWED BY: Michael Houser, Project Manager

APPENDIX G

Initial Settlement Survey Report

Apex Job No.	36650
Project Name:	Shelton Landfill - Vertical Settlement Monitoring
Note 1:	Vertical settlement points are rebar with control cap and 4' lath
Note 2:	Subsequent re-measurements will be compared against the baseline elevations indicated below to determine the extent of settlement, if any.

SETTLEMENT POINT NUMBER	**LOCATION**	**INITIAL BASELINE ELEVATIONS 6/26/2023**	FIRST READING	SECOND READING	THIRD READING
1	SEE EXHIBIT MAP	169.99	169.988	169.989	169.991
2		165.42	165.416	165.417	165.422
3		164.36	164.360	164.360	164.364
4		163.27	163.269	163.268	163.271
5		163.48	163.479	163.479	163.482
6		164.33	164.328	164.328	164.331
7		164.74	164.738	164.743	164.744
8		165.61	165.609	165.610	165.611

SHELTON LANDFILL SETTLEMENT MONITORING EXHIBIT

NORTH

GRAPHIC SCALE

100 0 50 100

(IN FEET)
1 inch = 100ft.

VERTICAL DATUM

NAVD 88 BASED ON RTK GPS MEASUREMENTS CONSTRAINED TO THE WASHINGTON STATE REFERENCE NETWORK.

Aug. 16, 2023

KURT A. PARCHER
STATE OF WASHINGTON
49286
REGISTERED
PROFESSIONAL LAND SURVEYOR

JOB-NO-36650

Apex Engineering LLC
2601 South 35th Street, Suite 200
Tacoma, Washington 98409-7479
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