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FINAL COMPLIANCE MONITORING REPORT

Remedial Excavations

8801 EAST MARGINAL WAY S., TUKWILA, WASHINGTON
AGREED ORDER NO. 6069

Submitted To: PACCAR Inc

Subject: FINAL COMPLIANCE MONITORING REPORT, REMEDIAL EXCAVATIONS,
8801 EAST MARGINAL WAY S., TUKWILA, WASHINGTON
AGREED ORDER NO. 6069

Shannon & Wilson prepared this report and participated in this project as a consultant to PACCAR Inc. This submittal presents the Final Compliance Monitoring Report for remedial excavations completed at 8801 East Marginal Way S., Tukwila, Washington. This report was prepared by the undersigned.

This report is one of multiple documents that fulfills the Final Compliance Monitoring Report requirements discussed in Task 4 of Exhibit C to Agreed Order No. 6069.

We appreciate the opportunity to be of service to you on this project. If you have questions concerning this report, or we may be of further service, please contact us.

Sincerely,

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EXECUTIVE SUMMARY

This Final Compliance Monitoring Report (CMR) summarizes soil remediation activities conducted at 8801 East Marginal Way S., Tukwila, Washington (8801 property), from September 15, 2021, through September 1, 2022. The remedial activities described in this CMR consist primarily of targeted excavations of impacted soil at Areas 1 through 8 at the 8801 property. This CMR also describes remedial actions implemented by the owner of the 8801 property, CenterPoint 8801 Marginal LLC (CenterPoint), during development including removal of polychlorinated biphenyl (PCB)-containing caulk, removal of PCB-containing soil, and removal of hydrocarbon-containing soil.

The Final Feasibility Study (FS), Interim Action Work Plan, Addendum to the Final FS and Interim Action Work Plan, Compliance Monitoring Plan, and Engineering Design Reports (EDRs) for the 8801 property describe the areas of concern, excavation-specific contaminants of concern (COCs), selected remedial actions, and compliance monitoring for the 8801 property. The selected remedial actions include eight targeted remedial excavations, groundwater treatment injections, removal of PCB-containing caulk, expansion of the air-sparging/soil vapor extraction (AS/SVE) system, and installation of a sub-slab depressurization system. This CMR primarily describes the eight targeted remedial excavations. This CMR also briefly describes CenterPoint's removal of PCB-containing caulk, PCB-containing soil, and hydrocarbon-containing soil during development.

Remedial Excavations

Remedial activities included excavation of impacted soil from eight areas (Areas 1 through 8) on the 8801 property from September 15, 2021, through September 1, 2022. Approximately 11,300 tons of non-hazardous soil was disposed at Waste Management's Columbia Ridge Landfill in Arlington, Oregon, including approximately:

- 8,290 tons of PCB-impacted soil,
- 1,500 tons of metals-impacted soil,
- 1,090 tons of halogenated volatile organic compound (HVOC)-impacted soil,
- 340 tons of carcinogenic polycyclic aromatic hydrocarbon (cPAH)-impacted soil, and
- 80 tons of total petroleum hydrocarbon in the gasoline range (TPH-G) impacted soil.

Performance soil samples were collected from excavation sidewalls and bottoms and analyzed for excavation-specific COCs. Samples were submitted to Fremont Analytical of Seattle, Washington, for chemical analyses. Concentrations of excavation-specific COCs in

performance samples were used to delineate the extents of the excavations. In addition to analytical results, excavation activities were guided by field screening (i.e., visual and olfactory indications of contamination).

Excavations were expanded until concentrations of excavation-specific COCs were below the remediation levels (RLs) (or cleanup level [CUL] if a RL was not established), until compliance with RLs or CULs was demonstrated with statistical evaluation, or until further excavation would potentially compromise the integrity of an existing structure. Excavations were backfilled with imported fill.

Removal of PCB-Containing Caulk

With the approval of the U.S. Environmental Protection Agency (EPA), CenterPoint removed PCB-containing caulk in pavement expansion joints and cracks in January 2022 in a separate remedial action from the targeted remedial excavations. A summary report discussing the remedial action and confirmation sampling was prepared by CenterPoint's environmental consultant and is attached as Appendix N.

Removal of Impacted Soil During Property Development

During CenterPoint's development activities on the 8801 property, soil was excavated for demolition of existing infrastructure and the placement of new infrastructure. Soil samples were collected in areas where potential contamination was observed and analyzed for COCs in accordance with the Soil Management Plan (Farallon, 2020). Soil sample results indicated that concentrations of COCs (primarily hydrocarbons) exceeded the RLs in multiple development excavations, confirming the presence of impacted soil. Except for three development excavations where PCBs were identified at concentrations exceeding the RL, the impacted soil encountered with the development excavations was managed in accordance with the Soil Management Plan and disposed at an appropriately licensed facility. For the three development excavations with elevated concentrations of PCBs, a sampling and disposal plan was approved by the EPA that was more stringent than the Soil Management Plan that required excavations of soil containing PCBs at concentrations exceeding the RL. Two summary reports (one for the PCB excavations and one for the other excavations) were prepared by CenterPoint's environmental consultant and are attached as Appendices O and P, respectively.

Conclusions

The remediation activities described in this CMR were effective at removing from the 8801 property all PCB-containing caulk and nearly all soil containing COCs at concentrations exceeding the RLs. Soil containing COCs at concentrations exceeding an RL

remains in a few locations on the 8801 property where (1) further excavation was not possible without potentially undermining the integrity of an existing structure, or (2) further excavation was not practicable and was not required by the Soil Management Plan.

Soil containing COCs at concentrations exceeding CULs are present throughout the 8801 property. The residual soil with COC concentrations exceeding RLs and/or CULs does not present a threat to human health or the environment because (1) it is covered by a building or concrete, pavement, clay liner, or other materials that serve as a cap over the soil and an environmental covenant will be recorded against the 8801 property to prohibit activities that would compromise the integrity of the cap without the advance approval by Ecology; and (2) it is not a source of contamination to the adjoining Lower Duwamish Waterway as indicated by groundwater samples previously collected along the shoreline of the 8801 property.

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ACRONYMS

AO	Agreed Order
AS/SVE	air-sparging/soil vapor extraction system
bgs	below ground surface
COC	contaminant of concern
CMR	Compliance Monitoring Report
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CUL	cleanup level
Ecology	Washington State Department of Ecology
EDR	Engineering Design Report
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
HVOC	halogenated volatile organic compound
IAWP	Interim Action Work Plan
LDW	Lower Duwamish Waterway
mg/kg	milligrams per kilogram
MOU	Memorandum of Understanding
MSL	mean sea level
MTCA	Model Toxics Control Act
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
RL	remediation level
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TCE	trichloroethylene
TEQ	toxicity equivalency quotient
TPH	total petroleum hydrocarbon
TPH-G	total petroleum hydrocarbon in the gasoline range
VC	vinyl chloride
WAC	Washington Administrative Code

1 INTRODUCTION

This Final CMR was prepared by Shannon & Wilson on behalf of PACCAR Inc (PACCAR) to summarize soil remediation activities conducted between September 15, 2021, and September 1, 2022, at 8801 East Marginal Way S., Tukwila, Washington (8801 property) in accordance with the EDRs for the excavation of Areas 1,2, 6, and 7 (East Excavations EDR) and Areas 3, 4, 5, and 8 (West Excavations EDR) prepared by Shannon & Wilson (2021d and 2021g).

The remedial activities described in this CMR consist primarily of targeted excavations of impacted soil at Areas 1 through 8 on the 8801 property. The objective of the remedial excavations was to remove pathways for contamination to impact potential receptors. The remedial excavations are one of several remedial actions that were designed to fulfill this objective by eliminating high concentrations of contaminants and removing them from the 8801 property.

Additionally, separate remedial actions undertaken by CenterPoint are summarized in this CMR, including removal of PCB-containing caulk in accordance with the EDR (Shannon & Wilson, 2021b), and removal of impacted soil encountered during site development activities, in accordance with the Soil Management Plan (Farallon, 2020).

1.1 Purpose of the Compliance Monitoring Report

The purpose of this CMR is to document that the remedial excavations have been implemented in accordance with the East Excavations EDR and West Excavations EDR (Shannon & Wilson, 2021d and 2021g).

In addition to remedial excavations, this CMR provides CenterPoint's summary of the removal of PCB-containing caulk and removal of impacted soil encountered during development activities (Section 6). These development activities further reduced the overall mass of COCs remaining on the 8801 property.

1.2 Physical Description and Use

The 8801 property occupies 24.30 acres on the east bank of the Lower Duwamish Waterway (LDW) and is relatively flat, with a ground surface elevation of approximately 20 feet above mean sea level (MSL). A vicinity map is provided as Figure 1.

The current owner of the 8801 property, CenterPoint, redeveloped the 8801 property from 2021 through 2023. Development activities occurred concurrent with the remedial activities described in this CMR.

CenterPoint constructed an approximately 414,400-square-foot warehouse for industrial use and trailer storage on the 8801 property. Additionally, CenterPoint's development included a landscaped berm within the 100-foot river buffer located along the western edge of the 8801 property. Most of the remainder of the 8801 property that was not covered by the warehouse, or the landscaped berm, was covered with an asphalt/concrete parking lot and driveways.

1.3 Geology

Due to the development of the 8801 property, the subsurface material in some areas may have been reworked during demolition and grading activities. The eight targeted remedial excavations described in this CMR were completed prior to any development activities that may have disturbed soil in the remedial excavation areas. For the purposes of this CMR, we assume that the 8801 property geology has remained generally consistent with the geology encountered during pre-development investigations.

Based on pre-development investigations, fill material underlies the ground surface and is up to 10 feet thick in some locations. Fill material includes gravelly structural fill beneath former buildings and paved areas, poorly graded sand to silty sand fill deposits, and gravelly backfill materials in historical excavations. Fill material at the 8801 property is underlain by a layer of fine-grained material, including silt, sandy silt, and silty sand that extends to a depth of 5 to 15 feet below ground surface (bgs). A poorly graded sand layer, which typically contains less than 10% silt, is generally present beneath the fine-grained layer beginning at 10 to 15 feet bgs, although at some locations it is present immediately beneath the pavement surface or the fill material. A layer of fine-grained materials, consisting mainly of silt and silty sand, is typically present beneath the poorly graded, sandy layer at depths of approximately 30 to 50 feet bgs. This fine-grained silty material acts as a confining layer to groundwater flow on the western portion of the 8801 property (Amec Earth and Environmental, 2011). The lower, fine-grained layer is typically underlain by poorly graded sand to the maximum depth explored at the 8801 property (60 feet bgs).

In 1966, the southwest portion of the 8801 property sloped down to the adjacent LDW. In approximately 1967, a berm was constructed to enclose the western and southern sides and form the southwest corner of the 8801 property. The berm squared off the southwest boundary of the 8801 property to its current configuration. Based on permit drawings (not as-built drawings), the berm was designed to be approximately 30 feet wide at its base,

12 feet wide at its top, and 15 feet high. The area behind the berm was backfilled with fill to bring the area level with the remaining 8801 property. Based on recent observations during excavation and investigation work, the berm is densely compacted and constructed of large cobbles, concrete blocks, and boulders, as well as smaller pieces of concrete and rock. The fill material that was placed behind the berm has been observed during excavation work to be present in the interstitial spaces between the rock and concrete on the inward-facing sides of the berm. The outward-facing (LDW) sides of the berm are armored with large block rip rap.

During construction by CenterPoint in 2021 and 2022, imported fill material was placed beneath the footprint of the future warehouse building to allow delivery trucks to directly load from the new building. The finished floor elevation of the future warehouse is approximately 4 feet above the original 8801 property surface. In addition, a landscaped berm was constructed within the 100-foot shoreline buffer and extended approximately 5 feet above the original 8801 property surface and tapers downwards towards the interior of the property.

1.4 Hydrogeology

Results of groundwater monitoring at the 8801 property indicate that the shallow aquifer is typically 8 to 10 feet below the typical site elevation. The hydraulic gradient in the shallow aquifer is generally toward the west. Groundwater velocity is estimated to be 40 feet per year.

Evaluation of the tidal influence on monitoring wells on the 8801 property indicate that the maximum tidal fluctuation along the western boundary of the 8801 property ranges from -3.03 feet relative to MSL to +1.85 feet MSL in the southern portion of the 8801 property, where riprap demarcates the 8801 property boundary. Farther north, where the sheet piling bulkhead demarcates the 8801 property boundary, the maximum tidal fluctuation ranges between -1.80 feet MSL and +1.32 feet MSL.

1.5 Regulatory Framework

The 8801 site consists of both an upland portion (the 8801 property) and the adjoining sediments in the LDW that are part of a Superfund site designated by the EPA. The 8801 site is subject to two separate Agreed Orders (AOs) with the Washington State Department of Ecology (Ecology): AO No. 6069, which applies to the 8801 property, and AO No. 3599, which applies to the sediments adjacent to the 8801 property. PACCAR and CenterPoint are parties to AO No. 6069; PACCAR is a party to AO No. 3599. Under a Memorandum of Understanding (MOU), Ecology is working with the EPA to identify and remove sources of ongoing contamination to the LDW.

This CMR is one of multiple documents that fulfills the Final CMR requirements discussed in Task 4 of Exhibit C to AO No. 6069. Separate CMRs are being submitted for other remedial actions at the 8801 property as they are completed. Remedial actions required pursuant to AO No. 6069 and their status are shown in Exhibit 1-1.

Exhibit 1-1: Status of Remedial Actions

Remedial Action	Status of Implementation
Removal of PCB-containing caulk in pavement expansion joints and cracks	Completed in January 2022. The PCB-containing caulk removal activities are reported in this CMR.
Excavation of hotspots, placement of clay/asphalt/concrete covers, and implementation of institutional controls	<p>The hotspots identified in the East Excavations EDR and West Excavations EDR (Shannon & Wilson, 2021d and 2021g) were excavated between September 2021 and September 2022.</p> <p>CenterPoint encountered additional areas of impacted soil during development activities and that impacted soil was disposed of at an appropriately licensed facility. The hotspot excavation activities completed by PACCAR and the soil disposal activities completed by CenterPoint are reported in this CMR.</p> <p>The foundation of the warehouse, the clay liner installed in the footprint of the landscaped berm, and the asphalt/concrete parking areas and driveways will serve as a cap over the 8801 property. An environmental covenant will be imposed against the 8801 property to memorialize the institutional controls, which will include prohibitions on the use of groundwater and activities that could disturb or expose contamination that will remain under the cap. The environmental covenant is anticipated to be imposed in late 2023.</p>
Injection of remediation compounds to promote enhanced reductive dechlorination of VOCs across the HVOC groundwater plume and TPH-G in the Northwest Area	Completed as described in the Final CMR for Groundwater Treatment Injections, dated March 30, 2023.
Extension and modification of the AS/SVE system	Substantially completed in May 2023. This action is described in the Final CMR for AS/SVE System Extension and Modification, dated September 26, 2023.
Installation of a sub-slab depressurization system and implementation of institutional controls to restrict extraction of groundwater and protect indoor air from vapor	Installation of the sub-slab depressurization system was substantially completed in April 2023. This action is described in the Final CMR for Sub-Slab Depressurization System, dated September 26, 2023.
Groundwater performance monitoring	Monitoring wells throughout the 8801 property, except some near the western property boundary, were decommissioned in Spring 2021 in preparation for development. Performance monitoring wells on the 8801 property were installed and developed in May 2023. Groundwater performance monitoring commenced in August 2023 and results will be reported to Ecology in a separate document.

NOTES:

CMR = Compliance Monitoring Report; PCB = polychlorinated biphenyls; HVOC = halogenated volatile organic compound; TPH-G = total petroleum hydrocarbons as gasoline-range organics

Because the 8801 property is adjacent to the LDW, the remedial actions detailed in this CMR are designed to be protective of the sediments and surface water of the LDW, to achieve the

source sufficiency requirements in the MOU, and meet Model Toxics Control Act (MTCA) requirements. This CMR was prepared in accordance with MTCA and Ecology's Cleanup Regulation (Washington Administrative Code [WAC] Chapter 173-340) (Ecology, 2013).

2 PLANNING AND SELECTION OF REMEDIAL ACTIONS

This section provides an overview of the process used to select the remedial excavations as a component of the remedy for the 8801 property. Further details are provided in the reports referenced below.

In 2020, Ecology approved the Final FS for the 8801 property (Shannon & Wilson, 2020a). Analytical data from previous investigations at the 8801 property was screened against Ecology's LDW-specific preliminary CULs to establish COCs and areas of concern. The COCs and areas of concern were used as the basis for the remedial alternative analysis and selection presented in the Final FS.

In 2020, Ecology approved the Final Interim Action Work Plan for the 8801 property (Shannon & Wilson, 2020b). The Final Interim Action Work Plan was based on the findings from the Final FS and detailed the cleanup standards, remedial action alternatives, rationale for the selected remedial actions, and compliance monitoring requirements. The report was called an "Interim" Action Work Plan because it proposed a final remedy for only the upland portion of the 8801 site (i.e., the 8801 property), not a final remedy for the entire 8801 site.

In 2020, Ecology approved an Addendum to the Final FS and Final Interim Action Work Plan (Addendum) (Shannon & Wilson, 2020c). The Final Interim Action Work Plan and the Addendum together constitute the IAWP for the 8801 property. The remedial actions described in the IAWP constitute the final remedy for the 8801 property.

In 2021, Ecology approved several EDRs describing the selected remedial actions. The West Excavations EDR (Shannon & Wilson, 2021g), East Excavations EDR (Shannon & Wilson, 2021d), and PCB caulk removal EDR (Shannon & Wilson, 2021b) detail the engineering design for the remedial actions discussed in this CMR. Requirements for the protection monitoring, performance monitoring, and confirmation monitoring to be conducted during the remedial actions are described in the Ecology-approved Compliance Monitoring Plan (Shannon & Wilson, 2021a).

In 2022, a modified excavation plan for Area 4 was submitted to and approved by Ecology (Shannon & Wilson, 2022a). Additionally, an application for risk-based cleanup and disposal of PCBs from the Ecology-approved Area 4 excavation limits was submitted to and

accepted by the EPA (Shannon & Wilson, 2022b). The modified excavation plan and EPA application and approval are discussed in more detail in Section 5.4.

3 CLEANUP STANDARDS

Cleanup standards consist of site-specific concentrations of hazardous substances and points of compliance where the concentrations must be attained. A discussion about the development of cleanup standards for the 8801 property is provided in the IAWP (Shannon & Wilson, 2020b and 2020c).

The cleanup standards selected in the IAWP for the remedial excavations consist of RLs and CULs for COCs. Due to the stringent values required to ensure that soil is protective of the leaching pathway, soil RLs, consisting of concentrations of COCs in soil, were used to delineate the limits of the remedial excavations. For COCs with no established RLs, the site-specific CULs were used.

In accordance with the Compliance Monitoring Plan, each excavation area had a unique suite of COCs dependent upon the COCs historically detected in the excavation areas. Excavation-specific COCs and the associated soil RLs and soil CULs were used to delineate the extents of remedial excavations. The excavation-specific COCs were promulgated in Table 7 of the Compliance Monitoring Plan and are repeated below in Exhibit 3-1 for convenience.

Exhibit 3-1: Chemicals of Concern Used to Delineate Remedial Excavations

Analyte	Site-Specific Cleanup Level (CUL)	Remediation Level (RL)	Value (mg/kg)
Area 1			
PCE		X	5
TCE		X	5
VC		X	5
Area 2			
Total cPAHs TEQ		X	0.6
Area 3			
Copper		X	250
Total PCB aroclors		X	0.5
TPH-G	X		250
Area 4			
Copper ¹		X	250
Total PCB aroclors ¹		X	0.5
Area 5			
Arsenic ²		X	14.6
Cadmium ²	X		5.1
Chromium ²	X		2,600
Lead ²	X		250
Total PCB aroclors ²		X	0.5
Area 6			
Arsenic		X	14.6
Area 7			
TPH-G	X		250
Area 8			
TPH-G	X		250

NOTES:

- 1 Copper and PCBs were initially used to define the excavation limits of Area 4. After it was established that PCBs were more extensive than initially estimated, PCBs were then established as the COC used to delineate the excavation limit.
- 2 In Area 5, COCs in shallow soil (1 to 5 feet depth) were arsenic, cadmium, chromium, and lead. COCs in deeper soil were arsenic, lead, and PCBs.

mg/kg = milligrams per kilogram; PCE = tetrachloroethene; TCE = trichloroethylene; TEQ = toxicity equivalency quotient; VC = vinyl chloride

4 REMEDIAL EXCAVATIONS OVERVIEW

This section summarizes the remedial excavations completed on the 8801 property in accordance with the East and West Excavations EDRs (Shannon & Wilson, 2021d and 2021g). Further details are provided in Appendix B and other appendices as referenced in this section.

In preparation for the excavations, the following activities were completed.

- Utilities were disconnected. In addition, public and private utility locators surveyed the proposed excavation areas for utilities.
- Groundwater monitoring wells within the proposed excavation areas were decommissioned. The status of groundwater monitoring wells at the conclusion of excavation activities is provided in Table 1. Well decommissioning logs are provided in Appendix C.
- Soil samples were collected from borings advanced in the proposed excavations areas and analyzed for COCs to develop a waste disposal profile. The waste was determined to be non-hazardous. Further discussion of waste profiling activities is provided in Appendix B, Section B.2.5, and waste profiling documents are provided in Appendix J.
- Sources of imported fill material were selected based on chemical and geotechnical analytical results of representative samples. Further details of imported fill evaluation are provided in Appendix E.
- Soil samples were collected from borings and used to confirm the bottom excavation limits at Areas 4, 5, 7, and 8. Drilling was used because the excavations were to be completed below the groundwater table and collection of base samples during excavation activities would not be representative due to the submerged base and loose soil. Further details regarding pre-excavation soil sampling are provided in Appendix B, Section B.2.6.

Remedial activities included excavation of impacted soil from eight areas (Areas 1 through 8) on the 8801 property from September 15, 2021, through September 1, 2022, using several excavators. When practicable, soil was directly loaded into trucks for transport to a disposal facility, otherwise soil was stockpiled on the 8801 property until it was transported to a disposal facility. Representative photos of the excavation activities are provided in Appendix A. Disposal certificates and truck tickets are provided in Appendix K. Approximately 11,300 tons of non-hazardous soil was disposed at Waste Management's Columbia Ridge Landfill in Arlington, Oregon, including approximately:

- 8,290 tons of PCB-impacted soil,
- 1,500 tons of metals-impacted soil,
- 1,090 tons of HVOC-impacted soil,

- 340 tons of cPAH-impacted soil, and
- 80 tons of TPH-G-impacted soil.

Monitoring for airborne lead was conducted during excavation activities at Area 5 because concentrations of lead in soil at Area 5 were identified to potentially be a human health risk prior to the start of excavation. Air monitoring was used to evaluate the potential exposure of workers to airborne lead in excess of the action level of 0.03 milligram per cubic meter. Lead was not detected in excess of the action level. Further details of airborne lead monitoring are provided in Appendix B, Section B.3.4, and analytical reports of the airborne lead are provided in Appendix D.

Approximately 111,000 gallons of water were pumped from excavation Areas 2 through 5 and treated in an on-site temporary treatment system consisting of settling tanks, a sand filter, and treatment vessels filled with granular activated carbon. The treated water was discharged to the sanitary sewer under a King County Discharge Authorization. The treated water was periodically analyzed to verify conformance with the discharge criteria. Further details are provided in Appendix B, Section B.3.8. Documentation of water treatment and discharge is provided in Appendix I.

Archeological monitoring of ground-disturbing activities was undertaken by professional archeologists in accordance with the approved Monitoring and Inadvertent Discovery Plan. No significant archeological materials were identified during site work. The Cultural Resources Monitoring Report is provided in Appendix L.

Surveys of the lateral extent of excavations and the locations of confirmation samples were undertaken by a licensed land surveyor. The final depth of Areas 3 through 8 was measured from the sidewalls using a tape measure; surveyors did not enter Areas 3 through 8 due to safety considerations because the depth was greater than 4 feet. The surveyed features, measured excavation base depths, and sample locations are incorporated into figures in this CMR.

Imported fill was used to backfill excavation areas to the approximate level of the surrounding ground. Excavation spoils were not used as backfill. Approximately 7,847 tons of gravel borrow, 3,760 tons of quarry spalls, and 282 tons of crushed rock were used as backfill. Quarry spalls were used where the excavations extended below the water table and were overlain by a geotextile. Gravel borrow, quarry spalls, or crushed rock were placed above the groundwater table. Excavators were used to spread the fill in lifts.

Compaction of the lifts of imported fill was evaluated during placement. Quarry spalls were compacted at up to 1-foot lifts using an excavator bucket and by tracking the excavator over the lift. Quarry spalls were compacted until lifts were observed to have a dense and

unyielding condition. Gravel borrow and crushed rock were compacted at up to 8-inch lifts using a smooth drum vibratory roller. A walk-behind vibratory-plate compactor was used in areas where the larger vibratory roller was restricted due to excavation size. Gravel borrow and crushed rock were compacted to at least 95% of maximum dry density as measured by a nuclear densometer, except for Areas 2 through 5. Crushed rock at Area 2 was compacted to a dense and unyielding condition, as evaluated using a ½-inch-diameter metal T-probe in a grid pattern throughout the individual lifts. Gravel borrow at Areas 3 through 5 was compacted to at least 90% of maximum dry density, as measured by a nuclear densometer. Further details of imported fill selection, placement, and compaction are provided in Section 5 and Appendix E.

5 PERFORMANCE MONITORING

In accordance with the Compliance Monitoring Plan, performance monitoring of remedial excavations included evaluation of residual concentrations of COCs in excavation sidewalls and bottoms and evaluation of imported fill.

Analytical testing of soil samples was used to evaluate residual concentrations of COCs in excavation sidewalls and bottoms. Typically, soil samples were collected from the sidewalls and bottom of each remedial excavation on 20-foot centers with a minimum of one sample collected from each sidewall and base. Samples were either collected (1) during pre-excavation drilling (discussed in Section B.2.6), (2) directly from the excavation sidewalls and bottom, or (3) from the excavator bucket. Samples were submitted for analysis at an Ecology-accredited laboratory: Fremont Analytical of Seattle, Washington. The selected analytical suite for performance samples was dependent on the COCs previously detected in the respective excavation area and was specified in the Compliance Monitoring Plan (Shannon & Wilson, 2021a). Further discussion of performance sample collection methods and the analytical suite is provided in Appendix B, Section B.3.3.

Concentrations of COCs in performance samples were used to delineate the extent of excavations. In addition to analytical results, excavation activities were guided by field screening (i.e., visual and olfactory indications of contamination). Excavations were expanded until concentrations of excavation-specific COCs were below the RLs (or CUL if an RL was not established), until compliance with RLs or CULs was demonstrated with statistical evaluation, or until further excavation would potentially compromise the integrity of an existing structure. The final limits of the excavations are shown in Figures 2 through 20.

Shannon & Wilson performed EPA Stage 2B (summary validation) on the chemical analysis results, except for the dioxin/furan results, on which EcoChem performed EPA Stage 2A validation. Validation procedures and criteria were consistent with requirements described in the Sampling and Analysis Plan. The Sampling and Analysis Plan is Appendix A of the Compliance Monitoring Plan. Based on the results of the data validation, all data was evaluated to be of known quality and acceptable for use as qualified. There was a usable result for all requested analytes for each sample. Data qualifiers assigned during validation were incorporated into the results tables (Tables 2 through 10). The quality assurance/quality control summary is provided in Appendix G.

The validated data was submitted to Ecology's Environmental Information Management System (EIM) in October 2022. The data has not been reviewed by the EIM Data Coordinator as of the date of this CMR.

A summary of methods, observations, and results is organized by remedial excavation area and is provided below.

5.1 Area 1

The remedial excavation at Area 1 was undertaken to remove concentrations of trichloroethylene (TCE) that exceeded the RL in shallow unsaturated soil. As described in the East Excavations EDR (Shannon & Wilson, 2021d), the excavation was expected to encompass 5,700 square feet and extend to 4 feet bgs. Once the initial excavation limits were reached, soil samples were collected from the sidewalls and the base of the excavation. The samples were analyzed for TCE, tetrachloroethylene (PCE), and vinyl chloride (VC). The excavation was expanded until results from the soil samples indicated that residual COCs were less than the RLs. Visual and olfactory indications of contamination were not observed in the excavation. Groundwater was not observed in the excavation.

The final excavation encompassed approximately 6,300 square feet and extended to 4 feet bgs. The final excavation extent is shown in Figure 3 and cross sections are provided in Figure 9. Soil samples collected from the final extents of the excavation had TCE, PCE, and VC at less than their respective RLs. The analytical results of the confirmation soil samples are presented in Table 2. The analytical results of the overexcavated performance soil samples are presented in Table 10.

A photo of Area 1 is provided in Exhibit 5-1 below.



Exhibit 5-1: Photo of the Southwest Corner of Area 1 on September 21, 2021. View direction is southwest.

Imported gravel borrow was used as backfill in Area 1 from the base of the excavation to ground surface. The selection, placement, and compaction of backfill is discussed in Appendix E.

5.2 Area 2

The remedial excavation at Area 2 was undertaken to remove concentrations of cPAHs that exceeded the RL for total cPAHs toxicity equivalency quotient (TEQ) in shallow unsaturated soil. As described in the East Excavations EDR (Shannon & Wilson, 2021d), the excavation was expected to encompass 660 square feet and extend to 2.5 feet bgs. Once the initial excavation limits were reached, soil samples were collected from the sidewalls and the base of the excavation. The samples were analyzed for cPAHs. Groundwater was not observed in the excavation.

The initial excavation limits were expanded until analytical results from soil samples indicated that residual concentrations of cPAHs were less than the RL. The analytical results of the confirmation soil samples are presented in Table 3. The analytical results of the overexcavated performance soil samples are presented in Table 10.

The final excavation encompassed approximately 1,660 square feet, and the bottom of the excavation varied between 2.5, 4, and 7 feet bgs depending on the results of confirmation

samples. The final excavation extent is shown in Figure 4 and cross sections are provided in Figure 10.

Imported backfill from a previous excavation completed in 2004 referred to as H4 (Kennedy/Jenks Consultants, 2004) was observed in the northeast and east sidewalls (noted in Figure 4) and therefore confirmation samples were not collected from the northeast and east sidewalls in accordance with the Compliance Monitoring Plan (Shannon & Wilson, 2021a). A photo of the northeast sidewall is provided in Exhibit 5-2 below.



Exhibit 5-2: Photo of the Northeast Sidewall of Area 2 on September 20, 2021. View direction is northeast. The northeast sidewall was observed to have apparent imported backfill from the previous H4 excavation.

After the final extents of the Area 2 remedial excavation were completed, a portion of the excavation was expanded vertically and backfilled with imported quarry spalls to provide a firm base for compaction of fill material. Imported crushed rock was used as backfill above the quarry spalls and the remainder of the excavation to ground surface. The selection, placement, and compaction of backfill is discussed in Appendix E.

5.3 Area 3

The remedial excavation at Area 3 was undertaken to remove concentrations of PCBs, copper, and TPH-G that exceeded RLs or the CUL in shallow unsaturated soil. As described in the West Excavations EDR (Shannon & Wilson, 2021g), the excavation was estimated to encompass 5,400 square feet and extend to 6 feet bgs; however, the excavation limits were based on “clean” sample points that were some distance from the samples with elevated

COCs (points DG11-11 and DG-11-12). Therefore, in accordance with the West Excavations EDR, the excavation commenced in the areas surrounding points DG11-11 and DG11-12 (see Figure 5) and was expanded incrementally based on visual indications of contamination and soil sample results. Soil samples were collected from the sidewalls and the base of the excavation and were analyzed for PCB aroclors, copper, and TPH-G. Exceedances of RLs/CULs were detected in the soil samples, therefore, the excavation was expanded with the objective of removing soil that exceeded RLs/CULs.

During excavation activities, an approximately 1-foot-thick, black-stained soil layer with a petroleum odor was observed at depths of approximately 2 to 6 feet throughout much of Area 3 to the east of the shoreline berm (Exhibit 5-3). Soil samples were collected from the black-stained soil and other soil layers. Some of the black-stained soil samples contained TPH-G at concentrations that exceeded the CUL, but others did not.



Exhibit 5-3: Photo of the North Portion of Area 3 on September 22, 2021. View direction is northwest. Black-stained soil was observed in the excavation sidewalls and bottom and are identified by white arrows in the photo. The black-stained soil was removed during subsequent expansion of the excavation.

Soil samples collected from the final extents of the excavation had PCBs, copper, and TPH-G at less than their respective RLs, except as discussed below in Exhibit 5-4. The analytical results of the confirmation soil samples are presented in Table 4. The analytical results of the overexcavated performance soil samples are presented in Table 10.

Exhibit 5-4: Area 3 Soil Samples at the Limits of the Excavation with Exceedances of Screening Levels

Sample ID	Concentration (mg/kg)	Discussion
A3-SIDE17:2	335 copper	The west portion of Area 3 was expanded twice with the objective of removing soil with exceedances of RLs. Soil samples were analyzed after each expansion. Further excavation was restricted to limit impacts to the structural integrity of the shoreline berm, which was exposed during excavation activities.
A3-SIDE18:2	435 copper	
A3-SIDE100:2	267 copper (Note 1)	
A3-BOT39:5.5	1,300 copper	Three soil samples (and one duplicate sample) from the west portion of the final extents of the excavation had detections of copper greater than the RL of 250 mg/kg; however, the concentrations were less than the human health cleanup level of 3,200 mg/kg. The residual concentrations of copper have a low potential to impact human health or the environment because residual copper concentrations are less than the human health cleanup level and Area 3 is covered with a clay liner and berm, which will limit the potential for direct contact and leaching from the soil.
A3-SIDE6:2.5	370 N* TPH-G	One soil sample had TPH-G at greater than the cleanup level of 250 mg/kg. A statistical evaluation of the residual concentrations of TPH-G in Area 3 was performed per WAC 173-340-740(7). Based on the statistical evaluation, the cleanup standard for TPH-G was achieved because: <ul style="list-style-type: none"> ▪ The Area 3 soil sample data set for gasoline was tested for suitability of either lognormal or normal distribution assumptions using D'Agostino's test (D'Agostino and Pearson, 1973) and the data set can be assumed to be lognormally distributed. ▪ The upper one-sided 95% confidence limit (UCL) on the true mean soil concentration was computed to be 52.57 mg/kg using Land's method (refer to Appendix H for the UCL calculation). As stipulated in WAC 173-340-740(7)(d)(i)(A) and (B), for soil compliance, the calculated UCL must be less than the soil cleanup level of 250 mg/kg. ▪ The highest residual concentration of TPH-G was 370 mg/kg, which is less than 500 mg/kg (2x CUL). The criterion is: "no single residual sample concentration shall be greater than two times the soil CUL." This sample did not exceed the criterion. ▪ 1 of 38 samples (3%) had exceedances of the CUL. The criterion is: "less than ten percent of the sample concentrations shall exceed the soil CUL." This sample did not exceed this criterion.

NOTES:

1 A3-SIDE100:2 is a field duplicate of A3-SIDE18:2

N* = Laboratory noted that Gasoline Range Organics (C6 - C12) chromatographic patterns indicated that detections were due to the presence of unresolved, non-target compounds in the gasoline range. Results are not consistent with a known petroleum distillate. Flag applied by Shannon & Wilson.

mg/kg = milligrams per kilogram

The final excavation encompassed approximately 4,370 square feet and extended to 7 feet bgs. The size of the final excavation was less than estimated (5,400 square feet) because the results of confirmation samples indicated that the extent of soil with concentrations above the RL/CUL was less than anticipated. Groundwater was not observed in the excavation. The final excavation extent is shown in Figure 5 and cross sections are provided in Figures 11 and 12.

Imported quarry spalls were used as backfill from the base of the excavation up to 5 feet depth. The quarry spalls were overlain by imported gravel borrow to ground surface. The selection, placement, and compaction of backfill is discussed in Appendix E.

5.4 Area 4

Area 4 was significantly expanded between the original proposed limits in the West Excavations EDR (Shannon & Wilson, 2021g) and the completion of the remedial activities. Because the remedial excavation plan was modified, a more extensive discussion is provided in this section, including a discussion of background information to provide context about the unique aspects of Area 4, investigation activities undertaken to aid in decisions, and details on the modified excavation plan.

5.4.1 Area 4 Background

The Area 4 excavation is in the southwest portion of the 8801 property (Figure 2). Prior to 1967, the area sloped down to the adjacent LDW. In approximately 1967, a berm was constructed to square off and enclose the southwestern corner of the 8801 property. Based on permit drawings (not as built drawings), the berm was designed to be approximately 30 feet wide at its base, 12 feet wide at its top, and 15 feet high. Once the berm was constructed, the area behind the berm was backfilled to bring the area level with the remaining 8801 property.

Based on observations during investigation and excavation work, the berm is densely compacted and constructed of large cobbles, concrete blocks, and boulders, as well as smaller pieces of concrete and rock. The fill material that was placed behind the berm has been observed during excavation work to be present in the interstitial spaces between the rock and concrete on the inward-facing sides of the berm. The outward-facing (LDW) sides of the berm are armored with large block rip rap.

5.4.2 Area 4 Initial Excavation

The initial excavation at Area 4 was undertaken to remove concentrations of PCBs and dioxins/furans in shallow soil (3 to 4 feet bgs) and copper in deeper soil as a secondary

component. As described in the West Excavations EDR (Shannon & Wilson, 2021g), the excavation was estimated to encompass 1,800 square feet and extend to 8 feet bgs. Once the initial extents of the excavation were reached, sidewall and base soil samples were collected to evaluate for compliance with the PCB and copper RLs. Copper was frequently detected in sidewall samples at concentrations exceeding its RL and PCBs were sporadically detected at concentrations exceeding its RL. The detected concentrations did not appear to follow a gradient or pattern, and values ranged by an order-of-magnitude between duplicates and/or adjacent samples. The observations were consistent with mixed fill material, such as that placed in the southwest corner of the 8801 property. Groundwater was encountered at 8 feet depth.

As the Area 4 excavation progressed, the extent of the excavation was expanded beyond its originally estimated limits to remove soil containing COCs exceeding RLs. In response to the ever-expanding excavation and after consultation with Ecology, the Area 4 excavation was suspended on November 3, 2021, to allow for further investigation.

5.4.3 Area 4 Further Investigation

On three separate occasions between October 29, 2021, and January 21, 2022, a push probe rig was used to collect soil samples from around the Area 4 excavation perimeter to delineate the lateral and vertical extent of copper and PCBs above their respective RLs. A total of 84 borings were advanced from 1 feet bgs up to 15 feet bgs approximately every 10 feet north to south and approximately every 20 feet west to east. A total of 189 soil samples were analyzed from the borings. The sample locations were designed to be representative of excavation sidewall or bottom samples. If a sample result exceeded the RL for copper or PCBs, the adjacent or deeper sample was analyzed. The sampling and quality control procedures were performed in accordance with the protocols detailed in the Compliance Monitoring Plan (Shannon & Wilson, 2021a).

The entire southwest corner of the 8801 property was investigated in this manner. The locations of borings are shown in Figure 19 and numbered as borings 29 through 134. The results of the investigation delineated the lateral and vertical extent of PCBs exceeding the RL. The lateral extent of copper exceeding its RL was delineated to the north, northwest, and east. Copper was detected at concentrations exceeding its RL at depths greater than 15 feet bgs in one location and within the berm along the western and southern boundaries of the 8801 property. The sample results indicated that copper was widespread in the fill material and extended vertically to depths exceeding 15 feet bgs and laterally into the berm on the southern and western boundaries of the 8801 property.

5.4.4 Area 4 Modified Excavation Plan

Based on the remedial action objectives in the IAWP and results of further investigation during October 2021 to January 2022, a modified excavation plan for Area 4 (Shannon & Wilson, 2022a) was submitted to and approved by Ecology (Kelley, 2022). The modified Area 4 excavation plan consisted of excavation of soil to remove PCBs detected at concentrations exceeding its RL. The excavation limits also included removing copper at concentrations that exceeded the human health exposure direct contact value of 3,200 milligrams per kilogram (mg/kg).

Ecology approved the use of analytical results from 62 existing samples as confirmation sidewall and bottom samples for the excavation. No additional sidewall or base samples were proposed to be collected because of the quantity and distribution of data collected during the extensive investigations in 2021 and 2022.

5.4.5 Area 4 Risk-Based Cleanup and Disposal of PCBs

Because PCBs were detected in the Area 4 excavation and no known source existed, the PCBs were regulated under the Toxic Substances Control Act. An application was submitted to the EPA for risk-based cleanup and disposal of PCBs using the Ecology-approved Area 4 excavation limits. The application detailed the excavation plan as described above to remove PCBs above their RL (Shannon & Wilson, 2022b). The EPA did not permit pre-excavation sample results to be used as confirmation samples; therefore, post-excavation soil samples were collected and analyzed for PCBs. The EPA accepted the modified excavation plan that included post-excavation soil sampling.

After completion of the Area 4 excavation, a completion report was submitted to the EPA (Shannon & Wilson, 2022c). The EPA approved the Area 4 risk-based cleanup and disposal as detailed in the completion report. The EPA approval letter is provided in Appendix M.

5.4.6 Area 4 Dioxin/Furans

Dioxin/furans were historically detected in Area 4 at sample locations C6 and DG11-1 at 3 to 4.5 feet depth in 2004 and 2011, respectively. The detected concentrations of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in both samples exceeded the human health direct contact level of 13 picograms per gram. The historical analytical results were discussed in the Final FS and IAWP (Shannon & Wilson, 2020a and 2020b).

During pre-excavation drilling in February 2021, two soil samples were collected from 8 feet depth in Area 4 and analyzed for dioxin/furans (sample IDs A4-1:8, A4-3:8, and duplicate A4-103:8). The detected concentrations of TCDD were below the human health direct contact value by one order of magnitude. As discussed in the approved West Excavations

EDR (Shannon & Wilson, 2021g), the pre-excavation samples were used as confirmation base samples for Area 4. Based on the results from the pre-excavation sampling, further sampling, or analysis for dioxin/furans in Area 4 was not required by Ecology (Hobbs, 2021).

Soil at historical sample locations C6 and DG11-1 was removed to 8 feet bgs during excavation at Area 4. The excavation was completed to the depth of the pre-excavation base samples (8 feet). A summary of dioxin/furan results from the pre-excavation samples is provided in Table 5B. The laboratory report is provided in Appendix F. The quality assurance/quality control summary is provided in Appendix G.

5.4.7 Area 4 Completed Final Excavation

The final Area 4 excavation was completed on September 1, 2022. The final excavation encompassed approximately 12,080 square feet, and the bottom of the excavation varied between 6 feet bgs to 15 feet bgs depending on the results of confirmation samples. Groundwater was observed in the excavation as shallow as 7 feet bgs and was tidally influenced. The final excavation extent is shown in Figure 6 and cross sections are provided in Figures 13 through 15. The analytical results of the confirmation soil samples are presented in Tables 5A and 5B. The analytical results of the overexcavated performance soil samples are presented in Table 10.

As approved in the Modified Excavation Plan (Shannon & Wilson, 2022a), some soil with concentrations of copper up to 3,120 mg/kg (exceeding the RL of 250 mg/kg) was left in place because it was infeasible to remove based on depth or location (adjacent to the stormwater treatment system or the shoreline berm structure). Copper concentrations that exceeded the direct contact value of 3,200 mg/kg were removed. Approximately 85% of the volume of detected copper in soil was removed. Approximately 8% of the remaining volume of copper exceeds the RL. A list of soil samples that remained in place with concentrations of copper is provided as Table 5A.

Exceedances of the RL for PCBs in soil were detected in the initial soil samples, therefore, the excavation was expanded with the objective of removing soil that exceeded RLs for PCBs. Soil samples for PCBs were collected from the final extents of the excavation. The soil samples had concentrations of PCBs at less than the RLs, except at two sidewall samples and one base sample, which are listed in Exhibit 5-5 below. Overexcavation at the three sample locations was restricted to prevent compromising the structural integrity of the shoreline berm, which was exposed during excavation activities and protects the 8801 property from erosion by the LDW.

Exhibit 5-5: Area 4 Soil Samples at the Limits of the Excavation with Exceedances of Remediation Levels for PCBs

Sample ID	Total PCB Aroclors (mg/kg)	Discussion
A4-BOT142:11	0.818	Further overexcavation at these three sample locations was restricted to limit impacts to the structural integrity of the shoreline berm, which was exposed during excavation activities.
A4-SIDE171:6	0.507	These residual concentrations of PCBs have a low potential to impact human health or the environment because remaining concentrations are less than the human health direct contact value of 1 mg/kg, are less than the PCB remediation action level for the LDW, and the area is covered with a clay liner, which will limit the potential for direct contact and leaching from soil to groundwater. In addition, the extent of soil exceeding the PCB RL is limited based on sampling conducted beneath A4-BOT142:11 (Figure 14) and the lateral limits of the shoreline berm near A3-SIDE171:6 and A3-SIDE177:6 (Figure 6) as these additional samples are below the PCB RL.
A4-SIDE177:6	0.657	

Photos of locations of samples A4-SIDE171:6 and A4-SIDE177:6 are provided in Exhibits 5-6 and 5-7. In the exhibits, the limits of excavation at samples A4-SIDE171:6 and A4-SIDE177:6 are shown. Materials used in the construction of the shoreline berm were exposed during excavation, including cobbles, boulders, and concrete blocks. The downslope of the shoreline berm is on the opposite side of the orange-colored silt fence.

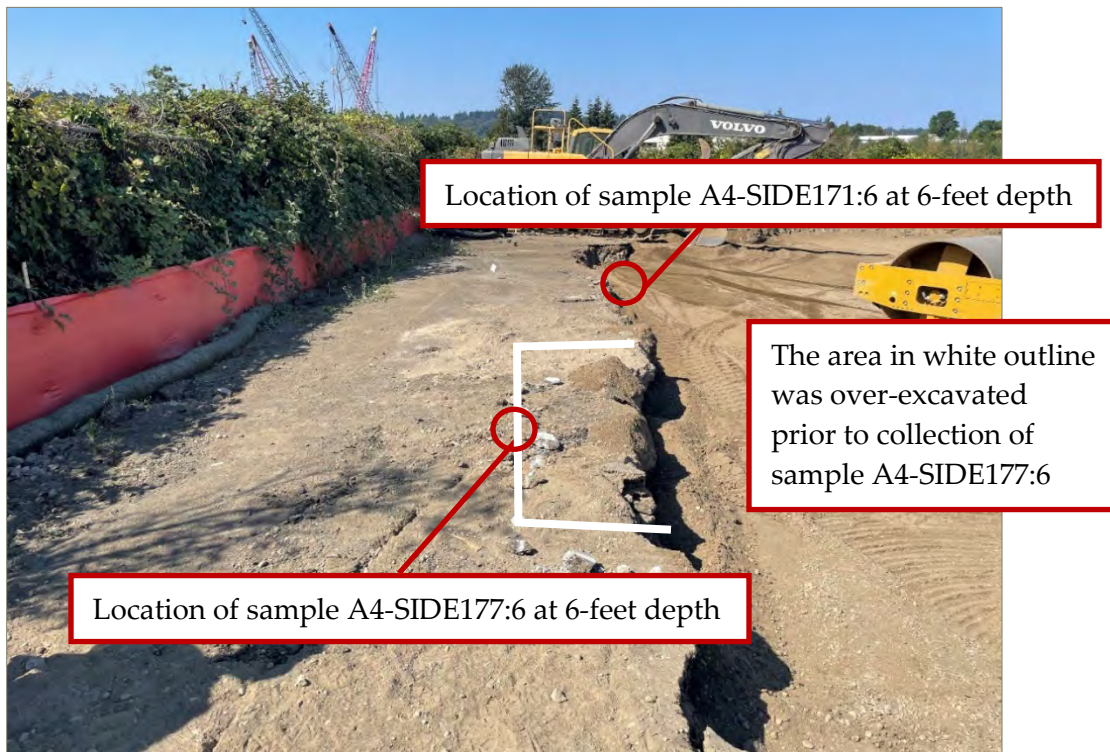


Exhibit 5-6: View of Proximity to Shoreline Berm Downslope to Samples A4-SIDE171:6 and A4-SIDE177:6. View direction is west. Photo taken on August 31, 2022.

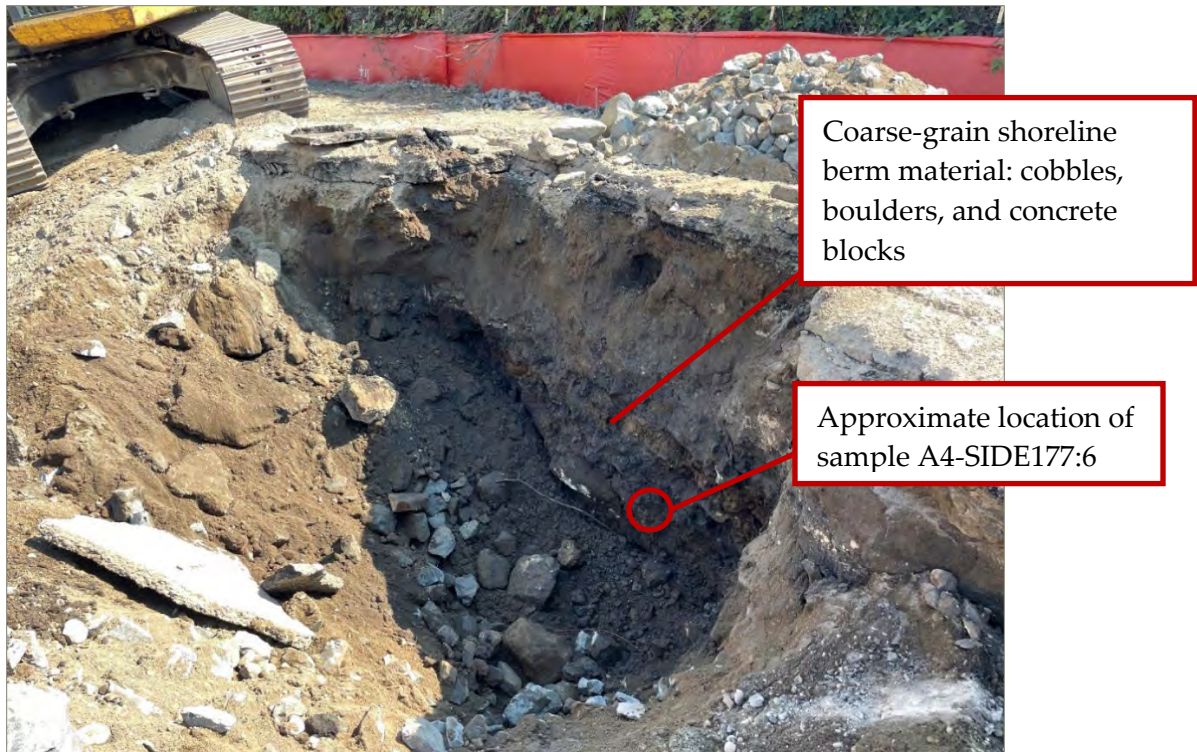


Exhibit 5-7: Excavation Activities at Sample A4-SIDE177:6. View direction is south. Photo taken on August 31, 2022.

After completion of the excavation, the excavation was backfilled with quarry spalls up to 5 feet bgs. The quarry spalls were overlain by imported gravel borrow to ground surface. The selection, placement, and compaction of backfill is discussed in Appendix E.

As part of CenterPoint's property development activities, the portion of Area 4 that is within 100 feet from the shoreline was covered with a clay liner. Overlying the clay liner is a drainage layer, which will direct water away from the clay liner. The portion of Area 4 beyond 100 feet from the shoreline is covered with asphalt or concrete pavement.

5.5 Area 5

The remedial excavation at Area 5 was undertaken to remove concentrations of lead, arsenic, cadmium, and chromium in shallow soil (1 to 5 feet bgs) in the unsaturated zone and lead, arsenic, and PCBs in deeper soil in the unsaturated and saturated zones. As described in the West Excavations EDR (Shannon & Wilson, 2021g), the excavation was estimated to encompass approximately 7,200 square feet and extend to 12 feet bgs.

Concrete blocks up to 3 feet in diameter were encountered in some portions of the excavation adjacent to a metal sheet pile wall that is an extension of the western perimeter sheet pile wall. The concrete blocks and excavated soil were disposed of off-site at a

permitted facility. Visual and olfactory indications of contamination were not observed in the excavation. Groundwater was observed in the excavation as shallow as 6 feet bgs and was tidally influenced.

Once the initial excavation limits were reached, soil samples were collected as follows:

- Samples from sidewalls in shallow soil (1 to 5 feet bgs) were analyzed for lead, arsenic, cadmium, and chromium.
- Samples from sidewalls in deeper soil were analyzed for lead, arsenic, and PCBs.
- Samples collected during drilling prior to excavation (February 2021) were used as confirmation samples of the base of the excavation because the depth of the excavation was below the water table. Samples of the base of the excavation were analyzed for lead, arsenic, and PCBs.

Exceedances of RLs were detected in some initial sidewall soil samples, therefore, the excavation was expanded with the objective of removing soil that exceeded RLs. Soil samples were collected from the final extents of the excavation. The soil samples had concentrations of COCs at less than the RLs, except one sidewall sample as discussed further below. The analytical results of the confirmation soil samples are presented in Table 6. The analytical results of the overexcavated performance soil samples are presented in Table 10.

The final excavation encompassed approximately 6,800 square feet, and the bottom of the excavation varied between 8, 9, 11, and 12 feet bgs depending on the results of confirmation samples. The size of the final excavation was less than estimated (7,200 square feet) because results of confirmation samples indicated that the extent of soil with concentrations above the RL did not extend as far to the north as anticipated in the West Excavations EDR. The final excavation extent is shown in Figure 7 and cross sections are provided in Figure 16.

Imported quarry spalls were used as backfill from the base of the excavation up to 5 feet depth. The quarry spalls were overlain by imported gravel borrow to ground surface. The selection, placement, and compaction of backfill is discussed in Appendix E.

5.5.1 Soil Sample A5-SIDE19:6

Area 5 was expanded at the northwest corner adjacent to the sheet pile wall with the objective of removing soil containing concentrations of lead above the RL. Soil samples from the final extent were collected after the expansion. Sidewall sample A5-SIDE19:6 was collected from the expanded excavation and lead was detected at 6-feet bgs at 3,470 mg/kg, which was greater than the CUL of 250 mg/kg. Lead was detected at 1.82 mg/kg in a sample collected from the same location at 2 feet bgs, which was less than the CUL.

Further lateral expansion at sample ID A5-SIDE19:6 was not undertaken to avoid compromising the structural integrity of the LDW shoreline berm, which was exposed during excavation activities. The shoreline berm protects the 8801 property from erosion from the LDW. The shoreline berm at this location appeared to consist of large concrete blocks and gravelly fill material, as shown in Exhibit 5-8 below.

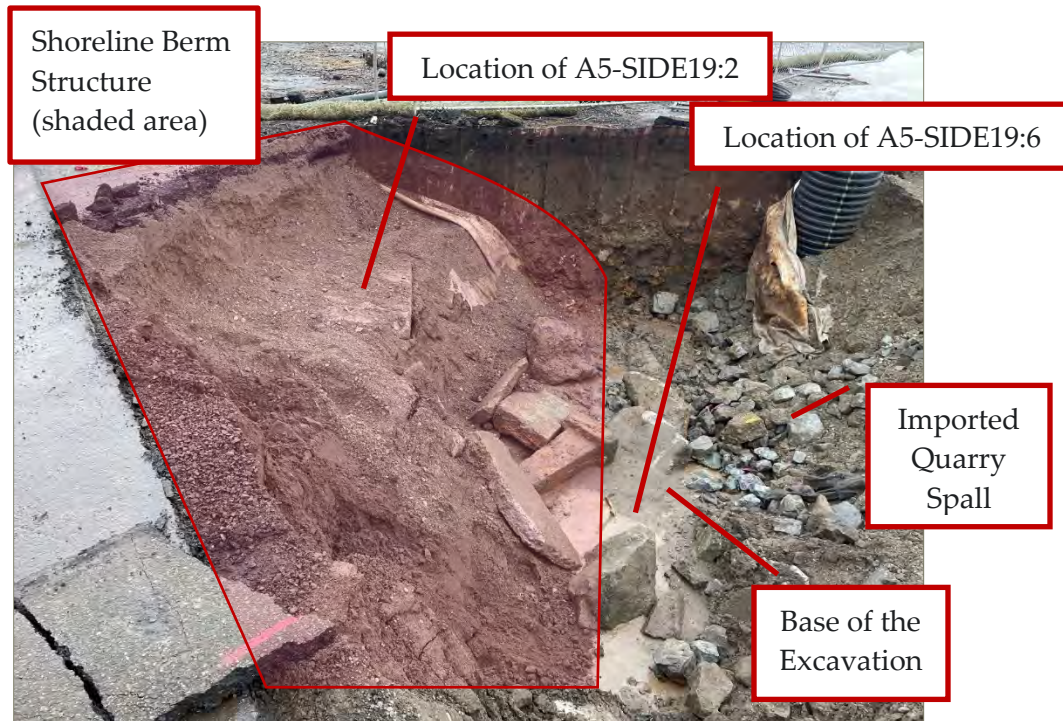


Exhibit 5-8: Extent of Excavation at the Northwest Corner of Area 5. View direction is north.

The residual concentration of lead represented by sample A5-SIDE19:6 has a low potential to impact human health or the environment based on the following lines of evidence:

- The area impacted by lead is likely small, because a sample collected from the same location 4 feet shallower (sample A5-SIDE19:2) had a concentration of lead with 1.82 mg/kg, which is less than the CUL.
- The area is now covered by a clay liner, which will limit the potential for direct contact and infiltration. The clay liner was constructed as part of the landscaped berm.
- Soil with concentrations of lead have not appreciably eroded to sediment. Investigation of sediments adjacent to the 8801 property were undertaken as part of the LDW-wide remedial investigation work. Sediment samples for 22 stations that were adjacent to the 8801 property were collected in 2006 and 2008. Sediment samples were analyzed for lead and other analytes. Lead was not determined to be a COC in sediment adjacent to the 8801 property. The results are presented in a report generated by Anchor QEA, LLC in 2008 (Anchor Environmental, LLC, 2008).

- Lead in groundwater adjacent to the sample location has not been detected above the CUL. Groundwater monitoring wells MW-37A and MW-37B are screened at 10 to 20 feet depth and 35 to 40 feet depth, respectively. Total or dissolved lead was not detected during monitoring events at MW-37A and 37B suggesting that leaching of lead in soil is not a pathway of concern.

5.6 Area 6

The remedial excavation at Area 6 was undertaken to remove concentrations of arsenic that were detected above the RL in unsaturated soil and detected in one historical soil sample labeled SFA-S15-3. As described in the East Excavations EDR (Shannon & Wilson, 2021d), the excavation was estimated to encompass approximately 200 square feet and extend to 6 feet bgs. Once the initial excavation limits were reached, soil samples were collected from the sidewalls and the base of the excavation. Visual and olfactory indications of contamination were not observed in the excavation. Groundwater was not observed in the excavation.

The initial excavation limits were expanded based on results from the soil samples. Soil samples collected from the final extents of the excavation had arsenic concentrations at less than the RL. The analytical results of the confirmation soil samples are presented in Table 7. The analytical results of the overexcavated performance soil samples are presented in Table 10.

The final excavation encompassed approximately 350 square feet and extended to 6 feet bgs. The final excavation extent is shown in Figure 8 and cross sections are provided in Figure 17.

Imported gravel borrow was used as backfill from the base of the excavation to ground surface. The selection, placement, and compaction of backfill is discussed in Appendix E.

5.7 Area 7

The excavation at Area 7 was undertaken to remove concentrations of TPH-G that were detected above the CUL in unsaturated soil in a historical soil sample (FWW-1). As described in the East Excavations EDR (Shannon & Wilson, 2021d), the excavation was estimated to encompass approximately 200 square feet and extend to 9 feet bgs.

During excavation, a concrete vault was uncovered in the excavation area after pavement was removed. The concrete vault extended to 4 feet bgs and appeared to be filled with pea gravel and was paved over. The purpose of the vault was unknown. Visual and olfactory indications of contamination were not observed in the vault or in the soil immediately

surrounding the vault. The vault was removed during excavation activities. A photo of the vault is provided below in Exhibit 5-9.



Exhibit 5-9: Area 7 – View of the Vault Uncovered After Pavement Was Removed from the Excavation. Photo taken on October 4, 2021. View direction is east. A concrete vault filled with pea gravel is shown in the south (right) half of the excavation.

Samples collected during drilling prior to excavation (February 2021) were used as confirmation samples of the base of the excavation because the depth of the excavation was below the water table. Groundwater was observed in the bottom of the excavation at approximately 8 feet bgs. Sidewall samples were collected from the final extents of the excavation and had TPH-G at less than the CUL. The analytical results of the confirmation soil samples are presented in Table 8. The analytical results of the overexcavated performance soil samples are presented in Table 10.

The final excavation encompassed approximately 300 square feet and extended to 9 feet bgs. The final excavation extent is shown in Figure 8 and cross sections are provided in Figure 17.

Imported gravel borrow was used as backfill from the base of the excavation to ground surface. The selection, placement, and compaction of backfill is discussed in Appendix E.

5.8 Area 8

The remedial excavation at Area 8 was undertaken to remove concentrations of TPH-G that were detected above the CUL in saturated soil. As described in the West Excavations EDR (Shannon & Wilson, 2021g), the excavation was estimated to encompass 200 square feet and extend to 10 feet bgs. The lateral and vertical extent of the excavation was limited by nearby subsurface and aboveground structures. A structure was encountered at 14 feet beneath Area 8 during pre-excavation drilling. The nature of the concrete structure is unknown, although it may be part of the shoreline sheet pile wall. To protect this structure, the excavation did not extend below 10 feet bgs. The lateral limits of excavation in Area 8 were limited by a sheet pile retaining wall to the west, an oil-water separator vault to the east, and a stormwater treatment vault to the north. To protect these structures, the excavation was terminated before reaching these structures. Additionally, the excavation was limited to the south to prevent unloading of the sheet pile wall and causing structural impacts to the sheet pile wall.

During excavation a metal rod and concrete block were uncovered and are suspected to be a “dead-man” anchor for the adjacent sheet pile wall. The metal rod and concrete block were left in place. A photo of the suspected dead-man anchor is provided below in Exhibit 5-10.



Exhibit 5-10: Photo of Area 8 on October 5, 2021. View direction is north. A 2-inch metal rod and concrete block were observed in the excavation and are possible structural components of a "dead-man" anchor for the shoreline sheet pile wall. A void was observed above the concrete block to ground surface.

Samples collected during drilling prior to excavation (February 2021) were used as confirmation samples of the base of the excavation because the depth of the excavation was below the water table. Samples of the base of the excavation were analyzed for TPH-G and exceeded the CUL for TPH-G at 10 feet bgs (base of the excavation).

Sidewall samples were collected from the final extents of the excavation and analyzed for TPH-G. A strong gasoline-like odor and sheen on saturated soil were observed at 7 feet bgs and deeper in the excavation. As predicted in the approved West Excavations EDR, TPH-G was detected above the CUL (250 mg/kg) in the north sidewall at 7 feet depth at 1,870 mg/kg and at the base of the excavation up to 18,800 mg/kg. The analytical results of the performance and confirmation soil samples are presented in Table 9.

The final excavation encompassed approximately 120 square feet, and the bottom of the excavation extended to approximately 10 feet bgs. The size of the final excavation was less than estimated (200 square feet) because further excavation was restricted to protect the

structural integrity of the sheet pile retaining wall to the west, an oil-water separator vault to the east, a stormwater treatment vault to the north, and the dead-man anchor within the footprint of the planned excavation. Groundwater was not observed in the excavation, potentially because the excavation was conducted adjacent to the LDW during a period of low tide. The final excavation extent is shown in Figure 8 and cross sections are provided in Figure 18.

Imported quarry spalls were used as backfill from the base of the excavation up to 5 feet depth. The quarry spalls were overlain by imported gravel borrow to ground surface. The selection, placement, and compaction of backfill is discussed in Appendix E.

6 CENTERPOINT REMEDIAL AND DEVELOPMENT ACTIVITIES

Remedial actions described in Sections 2 through 5 were performed at the direction of PACCAR. This section summarizes the remedial actions completed by CenterPoint to remove PCB-containing caulk and manage impacted soil encountered during property development activities.

The remedial actions completed by CenterPoint are consistent with the remedy approved by Ecology for soil at the 8801 property. The approved remedy involved the targeted excavation of identified “hotspot” areas where high COC concentrations had the potential to impact the LDW (as detailed in Sections 4 and 5). Soil in other areas of the 8801 property with COCs exceeding the RLs and/or CULs was allowed to remain in place because the soil was determined in the Final FS and IAWP (Shannon & Wilson, 2020a, 2020b, and 2020c) to not be impacting groundwater or migrating to the LDW. Therefore, the removal by CenterPoint of impacted soil from areas of the 8801 property where it was allowed to remain provides an additional benefit that exceeds the requirements of the IAWP. Any residual impacted soil remaining at the 8801 property is contained under a cap consisting of the building, concrete, pavement, clay liner, or other materials that cover the 8801 property. An environmental covenant will be recorded against the 8801 property as an institutional control to protect human health and the environment from the residual soil. Institutional controls are discussed in Section 8.

6.1 Removal of PCB-Containing Caulk

The removal of PCB-containing caulk was selected as a remedial action in the Final FS and IAWP because its presence may have contributed to historical concentrations of PCBs in monitoring wells MW-16A and MW-34A. Notification of removal and disposal of PCB-

containing caulk and adjacent concrete was submitted to EPA Region 10 in December 2021. The notification included a work plan, sampling and analysis plan, and request for approval of the cleanup in accordance with 40 CFR 761.61 (a) and (c), which was required because the layout of the caulk did not permit confirmation samples in a grid fashion as required in 40 CFR 761.61 (a). The PCB-Containing Caulk EDR (Shannon & Wilson, 2021b) was used as the basis for the sampling plan. Approval was granted by the EPA on January 6, 2022. Copies of the EPA correspondence are provided in Appendix N.

After approval by the EPA, removal of PCB-containing caulk was completed in January 2022. The PCB-containing caulk was located in pavement expansion joints and sealed cracks in the driveway in the north portion of the 8801 property. The caulk was removed by saw-cutting the concrete pavement at approximately 1 inch to 12 inches from either side of the caulk, depending on the irregular pattern of some expansion joints and cracks. The pavement was 3 to 6 inches in thickness. Thirty-nine (39) segments of caulk were removed ranging from 2 to 10 feet in length and one segment was removed at 425 feet in length. The locations of removed caulk segments are shown in Figures 1 and 3 of Appendix N.

Twenty-five tons of sawcut segments of caulk and adjacent concrete were removed with an excavator and placed into containers for disposal as PCB bulk product at Roosevelt Municipal Solid Waste Landfill in Roosevelt, Washington. Disposal tickets and the waste profile are provided in Appendix N.

Twelve confirmation samples and one duplicate sample were collected from the vertical concrete sidewalls and analyzed for the presence of PCBs to identify residual concentrations of PCBs. PCBs were not detected in confirmation samples above the reporting level of 0.02 mg/kg. The laboratory report and locations of confirmation samples are provided in Appendix N.

Post-excavation compliance monitoring will include downgradient groundwater monitoring to determine if groundwater CULs have been achieved. Compliance monitoring requirements are described in the Compliance Monitoring Plan (Shannon & Wilson, 2021a).

6.2 Development Excavations without PCB-Impacted Soil

As detailed in the Final FS and IAWP, the 8801 property was extensively investigated between 1986 and 2011 using both grid sampling throughout the property and focused sampling in areas where contamination was noted. The selected remedy for soil consisted of targeted “hotspot” excavations to remove soil with concentrations of COCs above the site-specific RL, and if no RL was established, the site-specific CUL. Areas with concentrations of COCs in soil above the CUL that remain at the 8801 property are capped, as described in the Final FS and IAWP. The targeted excavations of soil above the

RLs/CULs and capping together achieve the objectives of limiting exposure to COCs and preventing stormwater infiltration and leaching of COCs to groundwater, and migration of COCs in groundwater to the LDW.

The Final FS and IAWP anticipated that impacted soil would remain in areas outside the hotspot excavations. Specifically, concentrations of COCs in soil were historically detected in the five areas listed in Exhibit 6-1, as shown in Appendix B to the Final FS Figures B-3a and B-3b (diesel range TPH), Figures B-5a and B-5b (oil range TPH), Figure B-15 (cPAHs TEQ), Figure B-9a (arsenic), and Figure B-13 (PCB aroclors). Groundwater monitoring suggested that the groundwater was not being impacted by the diesel range TPH, oil range TPH, cPAHs, and arsenic in the soil. Ecology approved leaving the impacted soil in place because it was determined to not be impacting groundwater migrating to the LDW. The detections of PCBs in groundwater in the area north of the former warehouse (shown in Final FS Figure B-14) were suspected to be associated with the PCB-containing caulk in that vicinity that was later removed (Section 6.1).

During development activities, soil was excavated to facilitate demolition and placement of new infrastructure. When visual or olfactory signs of potential contamination were observed in a development excavation, the earthwork activity was temporarily suspended, and representative samples were collected and submitted for analysis of COCs. Soil samples were collected from the excavation sidewalls, bottom, and from test pits. COCs were detected in some of the development excavations at concentrations exceeding RLs/CULs, including oil range TPH, diesel range TPH, total cPAHs TEQ, arsenic, and PCBs. Soil encountered during development excavations that had an odor or visual discoloration was presumed to be impacted regardless of sample results.

The impacted soil encountered during the development excavations was handled in accordance with the Ecology-approved Soil Management Plan (Farallon, 2020), and transported off the 8801 property for disposal at an appropriately licensed facility.

A summary of the development excavations where COCs were detected above the site-specific RLs or CULs is provided in Exhibit 6-1 below. Multiple excavations are reported as a single excavation when the excavations are in close proximity and contain the same COCs. The locations of the excavations are shown in Figure 20.

Exhibit 6-1: Summary of Development Excavations and COCs

Excavation Group	Diesel Range TPH	Oil Range TPH	cPAHs TEQ	Arsenic	PCB Aroclors
North Stormwater Pond	X	X			
South Stormwater Pond	X	X			
East of Stormwater Ponds	X	X	X		
Catch Basin #1	X	X	X		
North of Former Warehouse (includes PCB Discovery Areas 1 through 3 and other nearby development excavations)	X	X	X	X	X

cPAHs = carcinogenic polycyclic aromatic hydrocarbons; PCB = polychlorinated biphenyl; TEQ = toxic equivalency quotient; TPH = total petroleum hydrocarbons

Approximately 5,382 tons of impacted soil (excluding PCB-impacted soil discussed in Section 6.3) was removed from the development excavations and disposed of at Waste Management’s Columbia Ridge Landfill.

Additional details regarding the development excavations are provided in a report prepared by CenterPoint’s environmental consultant and attached as Appendix O.

6.3 Development Excavations with PCB-Impacted Soil

Three areas of soil with concentrations of PCBs above the site-specific RL (0.5 mg/kg) and the EPA CUL (1.0 mg/kg) were encountered during development excavations. These areas are identified as PCB Discovery Areas 1 through 3 (Figure 20). A sampling and removal plan was prepared in accordance with 40 CFR 761.61(a) and was approved by the EPA. The sampling and removal plan included more stringent sampling and disposal requirements than the Soil Management Plan, such as confirmation sampling in a grid pattern and expansion of the excavations beyond the limits required for development activities until the site-specific RL was achieved or further excavation was prohibited due to an existing structure.

In advance of excavation, multiple borings in a grid pattern were used to collect soil samples that were analyzed for PCBs. The results of the investigation were used to delineate the extent of the initial excavations in PCB Discovery Areas 1 through 3. PCB Discovery Area 1 contamination was identified in one stockpile sample only, and no excavation work was undertaken in PCB Discovery Area 1 following the investigation work.

PCBs were detected in one stockpile sample from PCB Discovery Area 1 at concentrations below the EPA CUL but above the site-specific RL. However, soil samples analyzed from borings advanced in PCB Discovery Area 1 in May 2022 did not exceed the EPA CUL or the site-specific RL. Therefore, no excavation work was undertaken in PCB Discovery Area 1 following the investigation work.

Soil samples collected from borings advanced in Discovery Area 2 during the May 2022 investigation did not exceed the EPA CUL or the site-specific RL. Soil at the concrete ring structure was excavated to a depth of approximately 4 feet bgs to confirm that PCBs in soil were removed to the maximum extent practicable.

Concentrations of PCBs in soil samples collected from borings advanced in Discovery Area 3 during the May 2022 investigation and in samples collected in August 2022 exceeded the EPA CUL and the site-specific RL. Soil in Discovery Area 3 was excavated until soil analytical results confirmed that PCBs had been excavated to the maximum extent practicable.

PCBs detected in confirmation samples were less than the site-specific RL, except for one soil sample at boring FB-14 located in PCB Discovery Area 3. PCBs were detected in soil at boring FB-14 at 2.5 feet depth at 0.51 mg/kg, slightly exceeding the site-specific RL of 0.5 mg/kg. The concentration of PCBs in soil at boring FB-14 at 5 feet depth was less than the site-specific RL. The soil at FB-14 at 2.5 feet depth was not removed to prevent undermining the integrity of the retaining wall on the northern property boundary (Figure 5 of Appendix O). After the excavation was backfilled, the location of boring FB-14 was paved as an asphalt driveway and concrete curb, limiting the potential for exposure to any residual PCBs and preventing stormwater infiltration.

Approximately 183 tons of soil, concrete, and bricks containing PCBs at concentrations exceeding 50 mg/kg were disposed at Chemical Waste Management of the Northwest in Arlington, Oregon. Approximately 1,140 tons of soil containing PCBs at concentrations less than 50 mg/kg were disposed at Waste Management's Columbia Ridge Landfill in Arlington, Oregon.

Additional details regarding the remedial actions performed at PCB Discovery Areas 1 through 3 are provided in a report prepared by CenterPoint's environmental consultant and attached as Appendix P.

The EPA Region 10 PCB Coordinator determined that the cleanup described in CenterPoint's report (Appendix P) met the requirements for self-implementing on-site cleanup and disposal of PCB remediation waste pursuant to 40 CFR 761.61(a). The confirmation email from the PCB Coordinator is provided in Appendix Q.

7 COMPLIANCE MONITORING

Post-excavation compliance monitoring will include groundwater sampling at downgradient groundwater monitoring wells along the western boundary of the 8801 property to determine if groundwater CULs have been achieved. The locations of the proposed confirmation wells, selected analyses, and schedule are provided in the Compliance Monitoring Plan (Shannon & Wilson, 2021a).

Previously existing monitoring wells were decommissioned in Spring 2021 in accordance with the approved Compliance Monitoring Plan (Shannon & Wilson, 2021a) to accommodate development activities at the 8801 property. A list of the status of active and decommissioned wells as of September 2022 is provided in Table 1.

Replacement monitoring wells were installed in May 2023, after the development activities at the 8801 property were mostly complete. Groundwater performance monitoring commenced in August 2023. The installation of the replacement wells and results of groundwater performance monitoring will be reported to Ecology in a separate document.

8 INSTITUTIONAL CONTROLS

Because COCs will remain on the 8801 property at concentrations greater than the CULs, institutional controls will be implemented using an environmental covenant developed in accordance with WAC 173-340-440 and Ecology's Toxics Cleanup Program Procedure 440A.

In general, the environmental covenant will restrict activities that could disturb or expose impacted soil beneath the building, clay liner, and asphalt/concrete pavement covers, require regular inspections of the clay liner and asphalt/concrete pavement covers, and restrict the use of groundwater on the 8801 property. The requirements for the environmental covenant are described in the East Excavations EDR and West Excavations EDR (Shannon & Wilson, 2021d and 2021g).

Because the remedial actions are substantially completed on the 8801 property and the 8801 property is paved and the landscaped berm is installed, an environmental covenant will be prepared. The environmental covenant is anticipated to be implemented in late 2023.

9 SOURCE CONTROL SUFFICIENCY

Ecology signed an MOU with the EPA to identify and control upland sources of contamination that could re-contaminate the LDW after remediation of the sediments

(Ecology, 2016). The completed remedial excavations described in this CMR contribute to satisfying the source control requirements because the RLs and CULs meet the MTCA requirements for protection of human health and the environment as discussed in the IAWP (Shannon & Wilson, 2020b). PCB-containing caulk and soil that was at concentrations above the LDW remedial action level has been removed and are no longer a potential source to the LDW.

10 CONCLUSIONS

The remediation activities described in this CMR were effective at removing from the 8801 property all PCB-containing caulk and nearly all soil containing COCs at concentrations exceeding the RLs. Soil containing COCs at concentrations exceeding an RL remains in a few locations on the 8801 property where (1) further excavation was not possible without potentially undermining the integrity of an existing structure, or (2) further excavation was not practicable and was not required by the Soil Management Plan. Soil containing COCs at concentrations exceeding CULs are present throughout the 8801 property. The residual soil with COC concentrations exceeding RLs and/or CULs does not present a threat to human health or the environment because (1) it is covered by a building or concrete, pavement, a clay liner, or other materials that serve as a cap over the soil and an environmental covenant will be recorded against the 8801 property to prohibit activities that would compromise the integrity of the cap without the advance approval by Ecology; and (2) it is not a source of contamination to the adjoining LDW as indicated by groundwater samples previously collected along the shoreline of the 8801 property.

11 LIMITATIONS

The findings and conclusions documented in this report have been prepared for specific application to this project and have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in this area.

The site conditions and historical activities described in this CMR are based on information collected from various sources as referenced in the text. Because many aspects of this CMR rely on third-party information and interpretation of limited data, it is impossible to know if such a condition exists with absolute certainty. Contaminants may be present in areas that were not surveyed or sampled or may migrate to areas that showed no signs of contamination at the time they were studied. The findings presented are based on interpretation of information currently available to us and are made within the operational

scope, budget, and schedule constraints of this project. No warranty, express or implied, is made.

Shannon & Wilson has prepared the document “Important Information About Your Environmental Site Assessment/Evaluation Report” to assist you and others in understanding the information presented in this CMR.

12 REFERENCES

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Table 1: List of Monitoring Wells Sorted by Status

Well Name	Base of Screened Interval (ft bgs)	Screened Interval (ft bgs)	Diameter (inches)	Year Installed	Screen Material	Status
Monitoring Wells Remaining as of September 2022						
MW-26A	20	10-20	2	1997	PVC	Accessible
MW-26B	40	35-40	2	1997	PVC	Accessible
MW-26C	59	49-59	2	1997	PVC	Accessible
MW-29A	25	15-25	2	1997	PVC	Accessible
MW-29B	44	34-44	2	2002	PVC	Accessible
MW-29C	56	49-56	2	2002	PVC	Accessible
MW-35A	20	10-20	2	2002	PVC	Accessible
MW-35B	40	35-40	2	2002	PVC	Accessible
MW-36A	20	10-20	2	2002	PVC	Accessible
MW-36B	42	37-42	2	2002	PVC	Accessible
MW-37A	20	10-20	2	2002	PVC	Accessible
MW-37B	40	35-40	2	2002	PVC	Accessible
Monitoring Wells Decommissioned During 2021 and 2022						
MW-1A	9.8	4.75-9.8	4	1986	PVC	Decommissioned May 24, 2021
MW-6A (R)	20	5-20	2	2004	PVC	Decommissioned May 24, 2021
MW-7A	19.2	5.5-19.2	2	1986	PVC	Decommissioned May 24, 2021
MW-8A	18	3-18	2	1986	PVC	Decommissioned May 24, 2021
MW-8B	28.5	23.5-28.5	2	2002	PVC	Decommissioned May 24, 2021
MW-9A	20	5-20	2	1986	PVC	Decommissioned May 24, 2021
MW-10	20.3	5-20.3	2	1986	PVC	Decommissioned May 24, 2021
MW-11A	20.8	5-20.8	2	1986	PVC	Decommissioned May 24, 2021
MW-12A	20.5	5-20.5	2	1986	PVC	Decommissioned May 24, 2021
MW-14A	15.4	1.4-15.4	2	1986	PVC	Decommissioned May 24, 2021
MW-15A	15.9	1.9-15.9	2	1986	PVC	Decommissioned May 24, 2021
MW-16A	16.9	1.9-16.9	2	1986	PVC	Decommissioned May 24, 2021

Table 1: List of Monitoring Wells Sorted by Status

Well Name	Base of Screened Interval (ft bgs)	Screened Interval (ft bgs)	Diameter (inches)	Year Installed	Screen Material	Status
MW-18A	18.6	8.6-18.6	2	1986	PVC	Decommissioned May 24, 2021
MW-22A	20.3	5-20.3	2	1987	PVC	Decommissioned May 24, 2021
MW-23A	20.3	5-20.3	2	1987	PVC	Decommissioned May 24, 2021
MW-24A	25.5	20.5-25.5	2	1997	SS	Decommissioned May 24, 2021
MW-25A	23	13-23	2	1997	PVC	Decommissioned May 24, 2021
MW-27A	25.5	20.5-25.5	2	1997	SS	Decommissioned May 24, 2021
MW-28A	20.5	15.3-20.5	2	1997	SS	Decommissioned May 24, 2021
MW-28B	40.3	35.3-40.3	2	1997	SS	Decommissioned May 24, 2021
MW-30A	23.3	14.3-23.3	2	1997	PVC	Decommissioned August 12, 2022
MW-31A	23	13-23	2	1997	PVC	Decommissioned May 24, 2021
MW-32A	23	13-23	2	1997	PVC	Decommissioned May 24, 2021
MW-33A	20	10-20	2	2002	PVC	Decommissioned May 24, 2021
MW-34A	20	10-20	2	2002	PVC	Decommissioned May 24, 2021
MW-38A	23	13-23	2	2002	PVC	Decommissioned May 24, 2021
MW-39A	23	13-23	2	2002	PVC	Decommissioned May 24, 2021
MW-40A	20	10-20	2	2004	PVC	Decommissioned May 24, 2021
MW-40B	39	29-39	2	2011	PVC	Decommissioned May 24, 2021
MW-41A	20	10-20	2	2004	PVC	Decommissioned May 24, 2021
MW-42A	20	5-20	2	2004	PVC	Decommissioned May 24, 2021
MW-43A	20	5-20	2	2011	PVC	Decommissioned May 24, 2021
MW-44A	15	5-15	2	2011	PVC	Decommissioned March 6, 2023
MW-45A	15	5-15	2	2011	PVC	Decommissioned May 24, 2021
MW-46A	16	6-16	2	2011	PVC	Decommissioned May 24, 2021
MW-47A	15	5-15	2	2011	PVC	Decommissioned May 24, 2021
MW-47B	40	30-40	2	2011	PVC	Decommissioned May 24, 2021
MW-48A	15	5-15	2	2011	PVC	Decommissioned May 24, 2021

Table 1: List of Monitoring Wells Sorted by Status

Well Name	Base of Screened Interval (ft bgs)	Screened Interval (ft bgs)	Diameter (inches)	Year Installed	Screen Material	Status
MW-48B	30	10-30	2	2011	PVC	Decommissioned May 24, 2021
MW-49A	15	5-15	2	2011	PVC	Decommissioned May 24, 2021
MW-49B	45	35-45	2	2011	PVC	Decommissioned May 24, 2021
RW1	?	?	6?	1990	SS?	Not found during site redevelopment activities during 2021. Assumed to be previously decommissioned.
RW2	?	?	6?	1990	SS?	Not found during site redevelopment activities during 2021. Assumed to be previously decommissioned.
RW3	20	?	6	1990	SS	Decommissioned June 2, 2021

bgs = below ground surface; ft = feet; PVC = polyvinyl chloride; SS = stainless steel; ?=status unknown

Table 2: Area 1 Results of Final Confirmation Soil Samples

Location ID	Analyte Remediation Level (mg/kg) Depth (ft bgs)	Tetrachloroethene	Trichloroethene	Vinyl Chloride
		5	5	5
A1-BOT1	4	0.00873 J	0.0437	<0.0168
A1-BOT2	4	0.0611	0.259	<0.0151
A1-BOT3	4	0.0631	0.754	<0.0119
A1-BOT4	4	0.0433 J	0.738	<0.0120
A1-BOT5	4	0.0327 J	0.322	<0.0140
A1-BOT6	4	0.0258 J	0.264	<0.0115
A1-BOT7	4	0.0299 J	0.176	<0.0110
A1-BOT8	4	0.0144 J	0.0511	<0.0119
A1-BOT9	4	0.0214 J	0.0650	<0.0154
A1-BOT10	4	0.0181 J	0.134	<0.0194
A1-BOT11	4	<0.00539	0.0742	<0.0115
A1-BOT12	4	<0.00648	0.0164 J	<0.0139
A1-BOT13	4	<0.00552	<0.00934	<0.0118
A1-BOT14	4	<0.00606	0.0258	<0.0130
A1-BOT15	4	<0.0105	0.0640	<0.0225
	4 [†]	<0.00581	0.0727	<0.0124
A1-BOT16	4	<0.00620	0.0799	<0.0133
A1-BOT17	4	<0.00513	0.0308	<0.0110
A1-BOT18	4	<0.00520	0.116	<0.0111
A1-SIDE1	2	<0.00662	0.0169 J	<0.0142
A1-SIDE2	3	0.0814	0.371	<0.0131
	3 [†]	0.0914	0.440	<0.0133
A1-SIDE3	4	0.0488 J	0.393	<0.0133
A1-SIDE4	2	0.0641	1.13	<0.0145
A1-SIDE6	3	<0.00612	0.0210 J	<0.0131
A1-SIDE7	2	<0.00671	0.0508	<0.0143
A1-SIDE8	1	<0.00947	1.88	<0.0203
A1-SIDE9	3.5	<0.00488	0.166	<0.0104
A1-SIDE10	2	<0.00551	0.850	<0.0118
A1-SIDE11	4	<0.00678	0.165	<0.0145
A1-SIDE12	1	<0.00913	1.63	<0.0195
A1-SIDE13	2	0.0138 J	0.956	<0.0121
A1-SIDE14	3	0.00972 J	0.415	<0.0129
A1-SIDE15	1.5	0.00899 J	0.111	<0.0117
A1-SIDE16	4	<0.00645	<0.0109	<0.0138
A1-SIDE17	2	0.0693	0.404	<0.0119
A1-SIDE18	1	<0.00497	<0.00841	<0.0106

Table 2: Area 1 Results of Final Confirmation Soil Samples

Analyte	Tetrachloroethene	Trichloroethene	Vinyl Chloride	
Remediation Level (mg/kg)	5	5	5	
Location ID	Depth (ft bgs)			
A1-SIDE19	2	0.0120 J	0.165	<0.0147

NOTES:

† Sample is a duplicate. See below for a list of duplicates and primary samples.

 Samples A1-BOT100:4 is field-duplicate sample of A1-BOT15:4.

 Samples A1-SIDE100:3 is field-duplicate sample of A1-SIDE2:3.

Results are reported in mg/kg.

Final confirmation samples are listed. Samples that were overexcavated are not listed, including sample A1-SIDE5.

Results were obtained from Fremont Analytical, Inc. work orders 2109340 and 2110033.

< = Analyte was not detected; reported as less than the reporting limit.

J = Estimated concentration, detected greater than the method detection limit and less than the reporting level. Flag applied by the laboratory.

bgs = below ground surface; ft = feet; mg/kg - milligram per kilogram

Table 3: Area 2 Results of Final Confirmation Soil Samples

Analyte		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total cPAH TEQ ¹
Remediation Level (mg/kg)		0.6							
Location ID	Depth (ft bgs)								
A2-BOT1	2.5	<0.00225	<0.00201	<0.00193	<0.00242	<0.00649	<0.00783	<0.00639	<0.00208
A2-BOT2	2.5	0.00513 J	<0.00228	<0.00219	<0.00274	<0.00734	<0.00885	<0.00723	0.00274
A2-BOT3	2.5	0.00534 J	<0.00218	<0.00209	<0.00262	<0.00702	<0.00847	<0.00692	0.00266
A2-BOT4	2.5	<0.00222	<0.00199	<0.00191	<0.00239	<0.00641	<0.00773	<0.00631	<0.00206
	2.5 [†]	<0.00208	<0.00186	<0.00179	<0.00224	<0.00599	<0.00723	<0.00591	<0.00192
A2-BOT5	4	<0.0111	<0.0111	<0.0111	<0.0111	<0.0222	<0.0222	<0.0222	<0.00955
A2-BOT6	7	0.269	0.223	0.194	0.173	0.276	0.0454 J	0.105	0.3044
A2-BOT7	4	<0.0112	<0.0112	<0.0112	<0.0112	<0.0224	<0.0224	<0.0224	<0.00963
A2-SIDE1	1	<0.00257	<0.00230	<0.00221	<0.00277	<0.00740	<0.00893	<0.00729	<0.00238
A2-SIDE3	1	0.256	0.262	0.179	0.202	0.290	0.0608	0.119	0.34658
A2-SIDE5	1	0.214	0.209	0.148	0.175	0.228	0.0389	0.0866	0.27753
A2-SIDE7	2	0.00476 J	<0.00217	<0.00208	<0.00261	<0.00698	<0.00843	<0.00688	0.00260
A2-SIDE8	1.5	0.00678 J	<0.00267	<0.00257	<0.00322	<0.00861	<0.0104	<0.00848	0.00329
A2-SIDE10	3	<0.0102	<0.0102	<0.0102	<0.0102	<0.0203	<0.0203	<0.0203	<0.00876
	6	0.118	0.105	0.0747	0.0896	0.112	0.0251 J	0.0592	0.14278
A2-SIDE13	1.5	0.148	0.159	0.114	0.112	0.148	0.0390	0.0853	0.21031
A2-SIDE15	2	0.282	0.322	0.254	0.272	0.335	0.0936	0.194	0.43491
A2-SIDE17	2	<0.0111	<0.0111	<0.0111	<0.0111	<0.0221	<0.0221	<0.0221	<0.00954

NOTES:

1 Half of the value of the nondetects were used when calculating the total toxicity equivalent quotient, in accordance with the Washington State Department of Ecology publication 15-09-049 (April 2015).

[†] Sample A2-BOT100:2.5 is field-duplicate sample of A2-BOT4:2.5.

Results are reported in mg/kg.

Final confirmation samples are listed. Samples that were overexcavated are not listed. The following samples were overexcavated: A2-SIDE9, A2-SI

Results were obtained from Fremont Analytical, Inc. work orders 2109317, 2109457, 2110067, 2110219, 2110287, and 2110360.

< = Analyte was not detected; reported as less than the reporting limit.

J = Estimated concentration, detected greater than the method detection limit and less than the reporting level. Flag applied by the laboratory.

bgs = below ground surface; cPAH = carcinogenic polycyclic aromatic hydrocarbon; Ecolog = Washington State Department of Ecology; ft = feet; mg/kg = milligram per kilogram; TEQ = toxicity equivalency quotient

Table 4: Area 3 Results of Final Confirmation Soil Samples

Location ID	Depth (ft bgs)	Gasoline Range	Copper	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Total PCB
		Organics		1016	1221	1232	1242	1248	1254	1260	1262	1268	Aroclors
		250	250										0.5
A3-BOT13	6	24.5 N*	16.3 JH*	<0.00680	<0.00680	<0.00680	<0.00680	<0.00839	<0.00839	<0.00839	<0.00839	<0.00839	<0.00839
A3-BOT14	6	26.1	18.7 JH*	<0.00732	<0.00732	<0.00732	<0.00732	<0.00903	<0.00903	<0.00903	<0.00903	<0.00903	<0.00903
A3-BOT15	6	18.9	19.9 JH*	<0.00693	<0.00693	<0.00693	<0.00693	<0.00855	<0.00855	<0.00855	<0.00855	<0.00855	<0.00855
A3-BOT24	6	<2.89	45.8	<0.0130	<0.0130	<0.0130	<0.0130	<0.0160	<0.0160	<0.0160	<0.0160	<0.0160	<0.0160
A3-BOT25	6	3.85 J	29.9	<0.00934	<0.00934	<0.00934	<0.00934	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115
A3-BOT26	6	<2.97	24.1	<0.0110	<0.0110	<0.0110	<0.0110	<0.0136	<0.0136	<0.0136	<0.0136	<0.0136	<0.0136
A3-BOT27	6	2.97 J	22.2	<0.00987	<0.00987	<0.00987	<0.00987	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122
A3-BOT31	7	<2.70	19.9	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242
A3-BOT33	4	<2.76	132	<0.0214	<0.0214	<0.0214	<0.0214	<0.0214	0.323	<0.0214	<0.0214	<0.0214	0.323
A3-BOT35	5	37.2	102	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	0.0562	<0.0198	<0.0198	<0.0198	0.0562
A3-BOT39	5.5	3.71 J	1300	<0.0210	<0.0210	<0.0210	<0.0210	<0.0210	0.240	<0.0210	<0.0210	<0.0210	0.240
A3-BOT40	6.5	<3.48	133	<0.0313	<0.0313	<0.0313	<0.0313	<0.0313	<0.0313	<0.0313	<0.0313	<0.0313	<0.0313
A3-SIDE1	2.5	16.1	61.4	<0.00922	<0.00922	<0.00922	<0.00922	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114
	5	17.1	30.8	<0.00802	<0.00802	<0.00802	<0.00802	<0.00989	<0.00989	<0.00989	<0.00989	<0.00989	<0.00989
A3-SIDE2	5	95.5	24.0	<0.00726	<0.00726	<0.00726	<0.00726	<0.00896	<0.00896	<0.00896	<0.00896	<0.00896	<0.00896
A3-SIDE3	5	6.92	2.73	<0.00811	<0.00811	<0.00811	<0.00811	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
A3-SIDE4	2.5	99.4 N*	39.6	<0.00902	<0.00902	<0.00902	<0.00902	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111
	5	38.2 J*	29.7 J*	<0.0102	<0.0102	<0.0102	<0.0102	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126
	5†	19.8 J*	11.7 J*	<0.00789	<0.00789	<0.00789	<0.00789	<0.00973	<0.00973	<0.00973	<0.00973	<0.00973	<0.00973
A3-SIDE5	2.5	51.5 N*	128	<0.00843	<0.00843	<0.00843	<0.00843	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104
	5	6.09 J	17.1	<0.00850	<0.00850	<0.00850	<0.00850	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105
A3-SIDE6	2.5	370 N*	203	<0.0115	<0.0115	<0.0115	<0.0115	<0.0142	0.0345 J	<0.0142	<0.0142	<0.0142	0.0345 J
	5	129 N*	35.1	<0.00892	<0.00892	<0.00892	<0.00892	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110

Table 4: Area 3 Results of Final Confirmation Soil Samples

Analyte Remediation Level or Cleanup Level ¹ (mg/kg)	Gasoline Range Organics	Copper	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268	Total PCB Aroclors	
	250	250										0.5	
Location ID	Depth (ft bgs)												
A3-SIDE7	2.5	<2.24	147	<0.00813	<0.00813	<0.00813	<0.00813	<0.0100	0.118	<0.0100	<0.0100	<0.0100	0.118
	5	<2.46	12.7	<0.00746	<0.00746	<0.00746	<0.00746	<0.00921	<0.00921	<0.00921	<0.00921	<0.00921	<0.00921
A3-SIDE8:5	5	<1.89	3.35	<0.00620	<0.00620	<0.00620	<0.00620	<0.00765	<0.00765	<0.00765	<0.00765	<0.00765	<0.00765
A3-SIDE10	5	5.63 J	98.9 JH*	<0.00730	<0.00730	<0.00730	<0.00730	<0.00900	0.00943	<0.00900	<0.00900	<0.00900	0.00943 J
A3-SIDE11	2.5	17.9	24.5 JH*	<0.00596	<0.00596	<0.00596	<0.00596	<0.00735	<0.00735	<0.00735	<0.00735	<0.00735	<0.00735
	5	18.3	59.9 JH*	<0.00985	<0.00985	<0.00985	<0.00985	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121
A3-SIDE12	2.5	149	80.3 JH*	<0.00591	<0.00591	<0.00591	<0.00591	<0.00729	<0.00729	<0.00729	<0.00729	<0.00729	<0.00729
	5	33.0	23.8 JH*	<0.00702	<0.00702	<0.00702	<0.00702	<0.00866	<0.00866	<0.00866	<0.00866	<0.00866	<0.00866
A3-SIDE17	2	<2.35	335	<0.00962	<0.00962	<0.00962	<0.00962	<0.0119	0.0315 J	<0.0119	<0.0119	<0.0119	0.0315 J
A3-SIDE18	2	<2.39	435	<0.00758	<0.00758	<0.00758	<0.00758	<0.00935	0.0707	<0.00935	<0.00935	<0.00935	0.0707
	2 [†]	22.5 N*	267	<0.00744	<0.00744	<0.00744	<0.00744	<0.00917	0.0585	<0.00917	<0.00917	<0.00917	0.0585
A3-SIDE19	2	<2.21	229	<0.00835	<0.00835	<0.00835	<0.00835	<0.0103	0.0423 J	<0.0103	<0.0103	<0.0103	0.0423 J
A3-SIDE29	2.5	3.17 J	59.2	<0.0310	<0.0310	<0.0310	<0.0310	<0.0310	<0.0310	<0.0310	<0.0310	<0.0310	<0.0310
A3-SIDE30	2	<3.24	31.6	<0.0190	<0.0190	<0.0190	<0.0190	<0.0190	0.204	<0.0190	<0.0190	<0.0190	0.204
A3-SIDE32	5	<2.83	4.13	<0.0218	<0.0218	<0.0218	<0.0218	<0.0218	<0.0218	<0.0218	<0.0218	<0.0218	<0.0218
A3-SIDE37	2	<3.34	94.9	<0.0209	<0.0209	<0.0209	<0.0209	<0.0209	0.00833	<0.0209	<0.0209	<0.0209	0.00833 J
A3-SIDE38	2.5	<2.68	103	<0.0210	<0.0210	<0.0210	<0.0210	<0.0210	0.00957	<0.0210	<0.0210	<0.0210	0.00957 J

NOTES:

1 The listed value for copper and PCBs are the project-specific remediation levels. The listed value for gasoline range organics is the project-specific cleanup level since a remediation level was not

[†] Sample is a duplicate. See below for a list of duplicates and primary samples.

Sample A3-SIDE100:2 is field-duplicate sample of A3-SIDE18:2.

Sample A3-SIDE101:5 is field-duplicate sample of A3-SIDE4:5.

Results are reported in mg/kg.

Final confirmation samples are listed. Samples that were overexcavated are not listed.

The following confirmation samples were overexcavated: A3-BOT16, A3-BOT21, A3-BOT22, A3-BOT23, A3-BOT34, A3-BOT36, A3-SIDE20, and A3-SIDE28.

Results reported from Fremont Analytical, Inc. work orders 2109394, 2109493, 2109508, 2110219, 2110251, 2110287, 2110360, and 21111114.

Table 4: Area 3 Results of Final Confirmation Soil Samples

Analyte Remediation Level or Cleanup Level ¹ (mg/kg)	Gasoline Range Organics	Copper	Aroclor- 1016	Aroclor- 1221	Aroclor- 1232	Aroclor- 1242	Aroclor- 1248	Aroclor- 1254	Aroclor- 1260	Aroclor- 1262	Aroclor- 1268	Total PCB Aroclors
	250	250										0.5
Location ID	Depth (ft bgs)											

< Analyte was not detected; reported as less than the reporting limit.

Bold The detected concentration exceeds the regulatory limit for the associated analyte.

J = Estimated concentration, detected greater than the method detection limit and less than the reporting limit. Flag applied by the laboratory.

J* = Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson (*).

JH* = Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson (*).

N* = laboratory noted that Gasoline-Range Organics (C6 - C12) chromatographic patterns indicated that detections were due to the presence of unresolved, non-target compounds in the gasoline range.

Results are not consistent with a known petroleum distillate. Flag applied by Shannon & Wilson (*).

bgs = below ground surface; ft = feet; mg/kg = milligram per kilogram; PCB = polychlorinated biphenyl

Table 5A: Area 4 Copper and PCB Sample Results

Location ID in Figure 6	Analyte Remediation Level Sample Name	Depth [ft bgs]	Copper 250	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	TOTAL PCBS 0.5
				1016	1221	1232	1242	1248	1254	1260	1262	1268	
A4-1	A4-1:8	8	35.5	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126
A4-2	A4-2:8	8	149	<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0108
	A4-2:9	9	132	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106
A4-3	A4-3:8	8	29.1	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117
	A4-103:8	8 [†]	29.8	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119
A4-4	A4-4:8	8	105	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107
	A4-4:9	9	219	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101
16	A4-SIDE16:6	6	157	<0.00417	<0.00417	<0.00417	<0.00417	<0.00515	0.0348 J	<0.00515	<0.00515	<0.00515	0.0348 J
17	A4-SIDE17:6	6	24.8	<0.00520	<0.00520	<0.00520	<0.00520	<0.00640	<0.00640	<0.00640	<0.00640	<0.00640	<0.00640
18	A4-SIDE18:6	6	41.0	<0.00486	<0.00486	<0.00486	<0.00486	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
19	A4-SIDE19:2	2	41.3	<0.00424	<0.00424	<0.00424	<0.00424	<0.00520	<0.00520	<0.00520	<0.00520	<0.00520	<0.00520
	A4-SIDE19:6	6	27.3	<0.00469	<0.00469	<0.00469	<0.00469	<0.00580	<0.00580	<0.00580	<0.00580	<0.00580	<0.00580
27	A4-SIDE27:6	6	36.9	<0.0221	<0.0221	<0.0221	<0.0221	<0.0221	0.0283 J	<0.0221	<0.0221	<0.0221	0.0283 J
	A4-SIDE102:6	6 [†]	37.4	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	0.0160 J	<0.0242	<0.0242	<0.0242	0.0160 J
28	A4-SIDE28:6	6	34.2	<0.0249	<0.0249	<0.0249	<0.0249	<0.0249	0.0266 J	<0.0249	<0.0249	<0.0249	0.0266 J
29	A4-SIDE29:2	2	135	<0.0290	<0.0290	<0.0290	<0.0290	<0.0290	0.0862	<0.0290	<0.0290	<0.0290	0.0862
	A4-SIDE29:6.5	6.5	2300	<0.0272	<0.0272	<0.0272	<0.0272	<0.0272	0.398	<0.0272	<0.0272	<0.0272	0.398
30	A4-SIDE30:2	2	274	<0.0266	<0.0266	<0.0266	<0.0266	<0.0266	0.0884	<0.0266	<0.0266	<0.0266	0.0884
	A4-SIDE30:6	6	333	<0.0290	<0.0290	<0.0290	<0.0290	<0.0290	0.0444 J	<0.0290	<0.0290	<0.0290	0.0444 J
32	A4-SIDE32:8	8	416	<0.0282	<0.0282	<0.0282	<0.0282	<0.0282	0.0716	<0.0282	<0.0282	<0.0282	0.0716
34	A4-SIDE34:8	8	934	<0.0260	<0.0260	<0.0260	<0.0260	<0.0260	0.0925	<0.0260	<0.0260	<0.0260	0.0925
41	A4-SIDE41:6	6	35.3	<0.0304	<0.0304	<0.0304	<0.0304	<0.0304	0.0501 J	<0.0304	<0.0304	<0.0304	0.0501 J
44	A4-SIDE44:1	1	161	<0.0305	<0.0305	<0.0305	<0.0305	<0.0305	0.0380 J	<0.0305	<0.0305	<0.0305	0.0380 J
45	A4-SIDE45:6	6	47.4	<0.0302	<0.0302	<0.0302	<0.0302	<0.0302	0.0222 J	<0.0302	<0.0302	<0.0302	0.0222 J
49	A4-SIDE49:4.5	4.5	35.4	<0.00667	<0.00667	<0.00667	<0.00667	<0.00823	<0.00823	<0.00823	<0.00823	0.00823	<0.00823
50	A4-SIDE50:2	2	38.7	<0.00708	<0.00708	<0.00708	<0.00708	<0.00874	<0.00874	<0.00874	<0.00874	<0.00874	<0.00874
	A4-SIDE200:2	2 [†]	40.2	<0.00676	<0.00676	<0.00676	<0.00676	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	0.00882
	A4-SIDE50:5	5	146	<0.00766	<0.00766	<0.00766	<0.00766	<0.00945	0.0390	<0.00945	<0.00945	<0.00945	0.0390
52	A4-SIDE52:2	2	191	<0.00660	<0.00660	<0.00660	<0.00660	<0.00814	0.0305	<0.00814	<0.00814	<0.00814	0.0305
	A4-SIDE52:5	5	84.5	<0.00676	<0.00676	<0.00676	<0.00676	<0.00835	0.130	<0.00835	<0.00835	<0.00835	0.130
	A4-SIDE52:8	8	546	<0.00860	<0.00860	<0.00860	<0.00860	<0.0106	0.0868	<0.0106	<0.0106	<0.0106	0.0868
55	A4-SIDE52:9	9	917	<0.00850	<0.00850	<0.00850	<0.00850	<0.0105	0.105	<0.0105	<0.0105	<0.0105	0.105
	A4-SIDE52:10	10	154	<0.00786	<0.00786	<0.00786	<0.00786	<0.00970	0.0576	<0.00970	<0.00970	<0.00970	0.0576
56	A4-SIDE55:2	2	1700	<0.00748	<0.00748	<0.00748	<0.00748	<0.00922	0.0780	<0.00922	<0.00922	<0.00922	0.0780
	A4-SIDE55:6.5	6.5	1060	<0.00730	<0.00730	<0.00730	<0.00730	<0.00901	0.297	<0.00901	<0.00901	<0.00901	0.297
56	A4-SIDE56:2	2	264	<0.00664	<0.00664	<0.00664	<0.00664	<0.00820	0.0253	<0.00820	<0.00820	<0.00820	0.0253
	A4-SIDE56:5	5	332	<0.00627	<0.00627	<0.00627	<0.00627	<0.00773	0.0421	<0.00773	<0.00773	<0.00773	0.0421

Table 5A: Area 4 Copper and PCB Sample Results

Location ID in Figure 6	Analyte Remediation Level Sample Name	Depth [ft bgs]	Copper	Aroclor- 1016	Aroclor- 1221	Aroclor- 1232	Aroclor- 1242	Aroclor- 1248	Aroclor- 1254	Aroclor- 1260	Aroclor- 1262	Aroclor- 1268	TOTAL PCBS
			250										0.5
57	A4-SIDE57:9	9	376	<0.00665	<0.00665	<0.00665	<0.00665	<0.00821	0.0469	<0.00821	<0.00821	<0.00821	0.0469
	A4-SIDE57:10	10	3160	<0.00798	<0.00798	<0.00798	<0.00798	<0.00985	0.319	<0.00985	<0.00985	<0.00985	0.319
	A4-SIDE57:11	11	2080 J*	<0.00767	<0.00767	<0.00767	<0.00767	<0.00947	0.116	<0.00947	<0.00947	<0.00947	0.116
	A4-SIDE57:12	12	227	<0.00775	<0.00775	<0.00775	<0.00775	<0.00957	0.0993	<0.00957	<0.00957	<0.00957	0.0993
59	A4-SIDE59:11	11	964	<0.00671	<0.00671	<0.00671	<0.00671	<0.00828	0.308	<0.00828	<0.00828	<0.00828	0.308
	A4-SIDE59:12	12	2120	<0.00801	<0.00801	<0.00801	<0.00801	<0.00988	0.296	<0.00988	<0.00988	<0.00988	0.296
	A4-SIDE59:13	13	1000	<0.00725	<0.00725	<0.00725	<0.00725	<0.00894	0.161	<0.00894	<0.00894	<0.00894	0.161
	A4-SIDE59:14	14	409	<0.00809	<0.00809	<0.00809	<0.00809	<0.00998	0.0420	<0.00998	<0.00998	<0.00998	0.0420
60	A4-SIDE59:15	15	121	<0.00840	<0.00840	<0.00840	<0.00840	<0.0104	0.165	<0.0104	<0.0104	<0.0104	0.165
	A4-SIDE60:14	14	354	<0.00739	<0.00739	<0.00739	<0.00739	<0.00912	0.146	<0.00912	<0.00912	<0.00912	0.146
61	A4-SIDE60:15	15	168 J*	<0.00868	<0.00868	<0.00868	<0.00868	<0.0107	0.167	<0.0107	<0.0107	<0.0107	0.167
	A4-SIDE61:15	15	349	<0.00703	<0.00703	<0.00703	<0.00703	<0.00867	0.135	0.00867 J*	<0.00867	<0.00867	0.135
62	A4-SIDE62:8	8	352	<0.00753	<0.00753	<0.00753	<0.00753	<0.00929	0.340	<0.00929	<0.00929	<0.00929	0.340
	A4-SIDE62:9	9	277	<0.00792	<0.00792	<0.00792	<0.00792	<0.00977	0.138	<0.00977	<0.00977	<0.00977	0.138
	A4-SIDE62:10	10	927	<0.00797	<0.00797	<0.00797	<0.00797	<0.00984	0.234	<0.00984	<0.00984	<0.00984	0.234
	A4-SIDE62:11	11	175	<0.00849	<0.00849	<0.00849	<0.00849	<0.0105	0.0800	<0.0105	<0.0105	<0.0105	0.0800
63	A4-SIDE63:6	6	127	<0.00924	<0.00924	<0.00924	<0.00924	<0.0114	0.0176	<0.0114	<0.0114	<0.0114	0.0176
64	A4-SIDE64:2	2	21.8	<0.00735 J*	<0.00735	<0.00735	<0.00735	<0.00908	<0.00908	<0.00908 J*	<0.00908	<0.00908	<0.00908
	A4-SIDE64:5	5	208	<0.00853	<0.00853	<0.00853	<0.00853	<0.0105	0.161	<0.0105	<0.0105	<0.0105	0.161
66	A4-SIDE66:1.5	1.5	26.2	<0.00956	<0.00956	<0.00956	<0.00956	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118
	A4-SIDE66:5	5	15.3	<0.00806	<0.00806	<0.00806	<0.00806	<0.00994	<0.00994	<0.00994	<0.00994	<0.00994	<0.00994
69	A4-SIDE69:1.5	1.5	893	<0.00702	<0.00702	<0.00702	<0.00702	<0.00866	0.234	<0.00866	<0.00866	<0.00866	<0.00866
	A4-SIDE203:1.5	1.5 [†]	972	<0.00642	<0.00642	<0.00642	<0.00642	<0.00792	0.214	<0.00792	<0.00792	<0.00792	0.214
	A4-SIDE69:6.5	6.5	33.6	<0.00685	<0.00685	<0.00685	<0.00685	<0.00846	0.0207	<0.00846	<0.00846	<0.00846	0.0207
70	A4-SIDE70:2	2	719	<0.00716	<0.00716	<0.00716	<0.00716	<0.00884	0.500	<0.00884	<0.00884	<0.00884	0.500
	A4-SIDE70:7	7	29.8	<0.00639	<0.00639	<0.00639	<0.00639	<0.00789	<0.00789	<0.00789	<0.00789	<0.00789	<0.00789
71	A4-SIDE71:8	8	66.6	<0.00821	<0.00821	<0.00821	<0.00821	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101
72	A4-SIDE72:2	2	1300	<0.00852	<0.00852	<0.00852	<0.00852	<0.0105	0.135	<0.0105	<0.0105	<0.0105	0.135
	A4-SIDE72:6.5	6.5	1120	<0.0101	<0.0101	<0.0101	<0.0101	<0.0124	0.0952	<0.0124	<0.0124	<0.0124	0.0952
73	A4-SIDE73:2.5	2.5	716	<0.00811	<0.00811	<0.00811	<0.00811	<0.0100	0.0202	<0.0100	<0.0100	<0.0100	0.0202
	A4-SIDE204:2.5	2.5 [†]	664	<0.00762	<0.00762	<0.00762	<0.00762	<0.00940	0.0255	<0.00940	<0.00940	<0.00940	0.0255
	A4-SIDE73:7	7	1710	<0.00925	<0.00925	<0.00925	<0.00925	<0.0114	0.103	<0.0114	<0.0114	<0.0114	0.103
75	A4-SIDE75:10	10	258	<0.00669	<0.00669	<0.00669	<0.00669	<0.00826	0.0595	<0.00826	<0.00826	<0.00826	0.0595
	A4-SIDE75:11	11	2520	—	—	—	—	—	—	—	—	—	—
76	A4-SIDE76:13	13	706	<0.00764	<0.00764	<0.00764	<0.00764	<0.00943	0.245	<0.00943	<0.00943	<0.00943	0.245
	A4-SIDE76:14	14	45.9	<0.00931	<0.00931	<0.00931	<0.00931	<0.0115	0.113	<0.0115	<0.0115	<0.0115	0.113
78	A4-SIDE78:7	8	407	<0.00741	<0.00741	<0.00741	<0.00741	<0.00914	0.0962	0.0754	<0.00914	<0.00914	0.172
	A4-SIDE78:8	9	258	<0.00809	<0.00809	<0.00809	<0.00809	<0.00998	0.0645	<0.00998	<0.00998	<0.00998	0.0645
	A4-SIDE78:9	10	225	—	—	—	—	—	—	—	—	—	—

Table 5A: Area 4 Copper and PCB Sample Results

Location ID in Figure 6	Analyte Remediation Level Sample Name	Depth [ft bgs]	Copper 250	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	TOTAL PCBS 0.5
				1016	1221	1232	1242	1248	1254	1260	1262	1268	
79	A4-SIDE79:8	8	166	<0.0102	<0.0102	<0.0102	<0.0102	<0.0125	0.0168	<0.0125	<0.0125	<0.0125	0.0168
82	A4-SIDE82:8	8	334	<0.0106	<0.0106	<0.0106	<0.0106	<0.0131	0.0740	<0.0131	<0.0131	<0.0131	0.0740
	A4-SIDE82:9	9	292	—	—	—	—	—	—	—	—	—	—
92	A4-SIDE92:1.5	1.5	18.3	<0.00745	<0.00745	<0.00745	<0.00745	<0.00919	<0.00919	<0.00919	<0.00919	<0.00919	<0.00919
	A4-SIDE92:5	5	148	<0.00724	<0.00724	<0.00724	<0.00724	<0.00892	<0.00892	<0.00892	<0.00892	<0.00892	<0.00892
125	A4-SIDE125:2	2	45.1	<0.00898	<0.00898	<0.00898	<0.00898	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111
	A4-SIDE125:6	6	11.9	<0.0102	<0.0102	<0.0102	<0.0102	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126
	A4-SIDE125:8	8	19.6	<0.00997	<0.00997	<0.00997	<0.00997	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123
126	A4-SIDE126:2	2	208	<0.0101	<0.0101	<0.0101	<0.0101	<0.0124	0.154	<0.0124	<0.0124	<0.0124	0.154
	A4-SIDE126:6	6	35.4	<0.00963	<0.00963	<0.00963	<0.00963	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119
127	A4-SIDE127:2	2	69.7	<0.00997	<0.00997	<0.00997	<0.00997	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123
	A4-SIDE127:6	6	36.3	<0.00945	<0.00945	<0.00945	<0.00945	<0.0117	0.215	<0.0117	<0.0117	<0.0117	0.215
	A4-SIDE127:8	8	25.1	<0.00916	<0.00916	<0.00916	<0.00916	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113
130	A4-SIDE130:2	2	744	<0.00871	<0.00871	<0.00871	<0.00871	<0.0107	0.0392	<0.0107	<0.0107	<0.0107	0.0392
	A4-SIDE130:6	6	155	<0.00882	<0.00882	<0.00882	<0.00882	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109
131	A4-SIDE131:2	2	2260	—	—	—	—	—	—	—	—	—	—
132	A4-SIDE132:2	2	1480	—	—	—	—	—	—	—	—	—	—
133	A4-SIDE133:2	2	1240	<0.00861	<0.00861	<0.00861	<0.00861	<0.0106	0.203	<0.0106	<0.0106	<0.0106	0.203
	A4-SIDE133:5.5	5.5	132	<0.00808	<0.00808	<0.00808	<0.00808	<0.00996	0.0482	<0.00996	<0.00996	<0.00996	0.0482
134	A4-SIDE134:2	2	807 J*	<0.00859	<0.00859	<0.00859	<0.00859	<0.0106	0.297 J*	<0.0106	<0.0106	<0.0106	0.297 J*
	A4-SIDE217:2	2†	353 J*	<0.00860	<0.00860	<0.00860	<0.00860	<0.0106	0.0808 J*	<0.0106	<0.0106	<0.0106	0.0808 J*
	A4-SIDE134:6	6	684	<0.00939	<0.00939	<0.00939	<0.00939	<0.0116	0.126	<0.0116	<0.0116	<0.0116	0.126
135	A4-SIDE135:2	2	—	<0.00705	<0.00705	<0.00705	<0.00705	<0.00869	0.234	<0.00869	<0.00869	<0.00869	0.234
	A4-SIDE135:6	6	—	<0.0075	<0.0075	<0.0075	<0.0075	<0.00925	<0.00925	<0.00925	<0.00925	<0.00925	<0.00925
136	A4-SIDE136:2	2	—	<0.00669	<0.00669	<0.00669	<0.00669	<0.00825	0.331	<0.00825	<0.00825	<0.00825	0.331
	A4-SIDE136:6	6	—	<0.00675	<0.00675	<0.00675	<0.00675	<0.00833	0.0839	<0.00833	<0.00833	<0.00833	0.0839
137	A4-SIDE137:2	2	—	<0.00691	<0.00691	<0.00691	<0.00691	<0.00852	0.231	<0.00852	<0.00852	<0.00852	0.231
	A4-SIDE137:6	6	—	<0.008	<0.008	<0.008	<0.008	<0.00986	0.0453 J	<0.00986	<0.00986	<0.00986	0.0453 J
138	A4-SIDE138:2	2	—	<0.00646	<0.00646	<0.00646	<0.00646	<0.00797	0.212	<0.00797	<0.00797	<0.00797	0.212
	A4-SIDE138:6	6	—	<0.00779	<0.00779	<0.00779	<0.00779	<0.00961	0.0292 J	<0.00961	<0.00961	<0.00961	0.0292 J
140	A4-BOT140:8	8	—	<0.00732	<0.00732	<0.00732	<0.00732	<0.00903	0.0498	<0.00903	<0.00903	<0.00903	0.0498
141	A4-BOT141:8	8	—	<0.0067	<0.0067	<0.0067	<0.0067	<0.00826	0.273	<0.00826	<0.00826	<0.00826	0.273
142	A4-BOT142:11	11	—	<0.00701	<0.00701	<0.00701	<0.00701	<0.00865	0.818	<0.00865	<0.00865	<0.00865	0.818
143	A4-BOT143:8	8	—	<0.00688	<0.00688	<0.00688	<0.00688	<0.00848	<0.00848	<0.00848	<0.00848	<0.00848	<0.00848
144	A4-BOT144:11.5	11.5	—	<0.00795	<0.00795	<0.00795	<0.00795	<0.0098	0.412	<0.0098	<0.0098	<0.0098	0.412
145	A4-BOT145:10	10	—	<0.00831	<0.00831	<0.00831	<0.00831	<0.0103	0.364	<0.0103	<0.0103	<0.0103	0.364
146	A4-BOT146:11.5	11.5	—	<0.00889	<0.00889	<0.00889	<0.00889	<0.011	0.5	<0.011	<0.011	<0.011	0.5
147	A4-BOT147:8	8	—	<0.00725	<0.00725	<0.00725	<0.00725	<0.00894	0.0956	<0.00894	<0.00894	<0.00894	0.0956
148	A4-BOT148:8	8	—	<0.00733	<0.00733	<0.00733	<0.00733	<0.00904	0.273	<0.00904	<0.00904	<0.00904	0.273

Table 5A: Area 4 Copper and PCB Sample Results

Analyte		Copper	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	TOTAL	
Remediation Level	Depth		1016	1221	1232	1242	1248	1254	1260	1262	1268	PCBS	
Location ID	Sample Name	250										0.5	
In Figure 6	[ft bgs]												
149	A4-SIDE149:3	3	—	< 0.00706	< 0.00706	< 0.00706	< 0.00706	< 0.0087	0.203	< 0.0087	< 0.0087	< 0.0087	0.203
	A4-SIDE149:8	8	—	< 0.0063	< 0.0063	< 0.0063	< 0.0063	< 0.00777	0.0148 J	< 0.00777	< 0.00777	< 0.00777	0.0148 J
151	A4-BOT151:8	8	—	< 0.00756	< 0.00756	< 0.00756	< 0.00756	< 0.00933	0.209	< 0.00933	< 0.00933	< 0.00933	0.209
153	A4-SIDE153:2	2	—	< 0.00663	< 0.00663	< 0.00663	< 0.00663	< 0.00818	0.0263 J	< 0.00818	< 0.00818	< 0.00818	0.0263 J
	A4-SIDE153:6	6	—	< 0.00649	< 0.00649	< 0.00649	< 0.00649	< 0.00801	0.0309 J	< 0.00801	< 0.00801	< 0.00801	0.0309 J
154	A4-SIDE154:2	2	—	< 0.00574	< 0.00574	< 0.00574	< 0.00574	< 0.00708	< 0.00708	< 0.00708	< 0.00708	< 0.00708	< 0.00708
	A4-SIDE154:6	6	—	< 0.00655	< 0.00655	< 0.00655	< 0.00655	< 0.00808	0.322	< 0.00808	< 0.00808	< 0.00808	0.322
155	A4-BOT155:8	8	—	< 0.00655	< 0.00655	< 0.00655	< 0.00655	< 0.00808	0.333	< 0.00808	< 0.00808	< 0.00808	0.333
156	A4-BOT156:8	8	—	< 0.00717	< 0.00717	< 0.00717	< 0.00717	< 0.00884	0.099	< 0.00884	< 0.00884	< 0.00884	0.099
157	A4-BOT157:8	8	—	< 0.00704	< 0.00704	< 0.00704	< 0.00704	< 0.00868	0.114	< 0.00868	< 0.00868	< 0.00868	0.114
158	A4-BOT158:8	8	—	< 0.00728	< 0.00728	< 0.00728	< 0.00728	< 0.00898	0.0707	< 0.00898	< 0.00898	< 0.00898	0.0707
159	A4-BOT159:8	8	—	< 0.00766	< 0.00766	< 0.00766	< 0.00766	< 0.00946	< 0.00946	< 0.00946	< 0.00946	< 0.00946	< 0.00946
160	A4-BOT160:8	8	—	< 0.00728	< 0.00728	< 0.00728	< 0.00728	< 0.00898	< 0.00898	< 0.00898	< 0.00898	< 0.00898	< 0.00898
161	A4-SIDE161:2	2	—	< 0.00655	< 0.00655	< 0.00655	< 0.00655	< 0.00809	0.011 J	< 0.00809	< 0.00809	< 0.00809	0.011 J
	A4-SIDE161:6	6	—	< 0.00638	< 0.00638	< 0.00638	< 0.00638	< 0.00787	0.0199 J	< 0.00787	< 0.00787	< 0.00787	0.0199 J
162	A4-SIDE162:2	2	—	< 0.00657	< 0.00657	< 0.00657	< 0.00657	< 0.0081	0.191	< 0.0081	< 0.0081	< 0.0081	0.191
	A4-SIDE162:6	6	—	< 0.00655	< 0.00655	< 0.00655	< 0.00655	< 0.00809	0.0546	< 0.00809	< 0.00809	< 0.00809	0.0546
163	A4-SIDE163:2	2	—	< 0.00652	< 0.00652	< 0.00652	< 0.00652	< 0.00804	0.329	< 0.00804	< 0.00804	< 0.00804	0.329
	A4-SIDE163:6	6	—	< 0.00833	< 0.00833	< 0.00833	< 0.00833	< 0.0103	< 0.0103	< 0.0103	< 0.0103	< 0.0103	< 0.0103
164	A4-SIDE164:2	2	—	< 0.0480	< 0.0480	< 0.0480	< 0.0480	< 0.0480	0.329 J	< 0.0480	< 0.0480	< 0.0480	0.329 J
	A4-SIDE164:5	5	—	< 0.0486	< 0.0486	< 0.0486	< 0.0486	< 0.0486	0.0235 J	< 0.0486	< 0.0486	< 0.0486	0.0235 J
165	A4-BOT165:6	6	—	< 0.00801	< 0.00801	< 0.00801	< 0.00801	< 0.00988	0.0591	< 0.00988	< 0.00988	< 0.00988	0.0591
166	A4-BOT166:6	6	—	< 0.00752	< 0.00752	< 0.00752	< 0.00752	< 0.00928	< 0.00928	< 0.00928	< 0.00928	< 0.00928	< 0.00928
167	A4-SIDE167:2	2	—	< 0.00752	< 0.00752	< 0.00752	< 0.00752	< 0.00928	< 0.00928	< 0.00928	< 0.00928	< 0.00928	< 0.00928
	A4-SIDE167:5	5	—	< 0.00663	< 0.00663	< 0.00663	< 0.00663	< 0.00818	< 0.00818	< 0.00818	< 0.00818	< 0.00818	< 0.00818
168	A4-BOT168:6	6	—	< 0.0106	< 0.0106	< 0.0106	< 0.0106	< 0.0131	< 0.0131	< 0.0131	< 0.0131	< 0.0131	< 0.0131
169	A4-SIDE169:2	2	—	< 0.00824	< 0.00824	< 0.00824	< 0.00824	< 0.0102	< 0.0102	< 0.0102	< 0.0102	< 0.0102	< 0.0102
	A4-SIDE169:5	5	—	< 0.00933	< 0.00933	< 0.00933	< 0.00933	< 0.0115	< 0.0115	< 0.0115	< 0.0115	< 0.0115	< 0.0115
170	A4-SIDE170:2	2	—	< 0.00927	< 0.00927	< 0.00927	< 0.00927	< 0.0114	0.165	< 0.0114	< 0.0114	< 0.0114	0.165
	A4-SIDE170:5	5	—	< 0.00993	< 0.00993	< 0.00993	< 0.00993	< 0.0122	< 0.0122	< 0.0122	< 0.0122	< 0.0122	< 0.0122
171	A4-SIDE171:2	2	—	< 0.00809	< 0.00809	< 0.00809	< 0.00809	< 0.00998	0.06 J*	< 0.00998	< 0.00998	< 0.00998	0.06 J*
	A4-SIDE219:2	2 [†]		< 0.0427	< 0.0427	< 0.0427	< 0.0427	< 0.0427	0.0087 J*	< 0.0427	< 0.0427	< 0.0427	0.0087 J*
	A4-SIDE171:6	6	—	< 0.00678	< 0.00678	< 0.00678	< 0.00678	< 0.00837	0.507	< 0.00837	< 0.00837	< 0.00837	0.507
173	A4-SIDE173:2	2	—	< 0.00733	< 0.00733	< 0.00733	< 0.00733	< 0.00904	0.117	< 0.00904	< 0.00904	< 0.00904	0.117
	A4-SIDE173:6	6	—	< 0.00646	< 0.00646	< 0.00646	< 0.00646	< 0.00797	< 0.00797	< 0.00797	< 0.00797	< 0.00797	< 0.00797
174	A4-SIDE174:2	2	—	< 0.00712	< 0.00712	< 0.00712	< 0.00712	< 0.00879	0.0402 J	< 0.00879	< 0.00879	< 0.00879	0.0402 J
	A4-SIDE174:6	6	—	< 0.00614	< 0.00614	< 0.00614	< 0.00614	< 0.00757	< 0.00757	< 0.00757	< 0.00757	< 0.00757	< 0.00757
	A4-SIDE174:7	7	—	< 0.00643	< 0.00643	< 0.00643	< 0.00643	< 0.00793	0.135	< 0.00793	< 0.00793	< 0.00793	0.135

Table 5A: Area 4 Copper and PCB Sample Results

Analyte		Copper	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	Aroclor-	TOTAL
Remediation Level	Depth		1016	1221	1232	1242	1248	1254	1260	1262	1268	PCBS	
Location ID	Sample Name	[ft bgs]	250										0.5
In Figure 6													
175	A4-SIDE175:2	2	—	< 0.0067	< 0.0067	< 0.0067	< 0.0067	< 0.00826	0.0213 J	< 0.00826	< 0.00826	< 0.00826	0.0213 J
	A4-SIDE175:6	6	—	< 0.00653	< 0.00653	< 0.00653	< 0.00653	< 0.00805	< 0.00805	< 0.00805	< 0.00805	< 0.00805	< 0.00805
176	A4-SIDE176:2	2	—	< 0.00664	< 0.00664	< 0.00664	< 0.00664	< 0.00819	< 0.00819	< 0.00819	< 0.00819	< 0.00819	< 0.00819
	A4-SIDE220:2	2†	—	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041
	A4-SIDE176:6	6	—	< 0.00757	< 0.00757	< 0.00757	< 0.00757	< 0.00935	< 0.00935	< 0.00935	< 0.00935	< 0.00935	< 0.00935
	A4-SIDE176:7	7	—	< 0.00739	< 0.00739	< 0.00739	< 0.00739	< 0.00911	0.0662	< 0.00911	< 0.00911	< 0.00911	0.0662
177	A4-SIDE177:2	2	—	< 0.0079	< 0.0079	< 0.0079	< 0.0079	< 0.00974	< 0.00974	< 0.00974	< 0.00974	< 0.00974	< 0.00974
	A4-SIDE177:6	6	—	< 0.00864	< 0.00864	< 0.00864	< 0.00864	< 0.0107	0.657	< 0.0107	< 0.0107	< 0.0107	0.657
DG11-1	DG11-1	10-11	—	< 0.0038	< 0.0038	< 0.0038	< 0.0038	< 0.0038	< 0.0038	< 0.0038	—	—	< 0.0038
SS-BOT-03	SS-BOT-03	6	141	—	—	—	—	—	—	—	—	—	1.45
SS-SW-06	SS-SW-06	4.5-5	12.5	—	—	—	—	—	—	—	—	—	0.039
SS-SW-09	SS-SW-09	4.5-5	130	—	—	—	—	—	—	—	—	—	0.054

NOTES:

Results are reported in mg/kg.

† Sample is a duplicate. See below for a list of duplicates and primary samples.

Sample A4-103:8 is a field-duplicate of sample A4-3:8.

Sample A4-SIDE102:6 is a field-duplicate of sample A4-SIDE27:6.

Sample A4-SIDE200:2 is a field-duplicate of sample A4-SIDE50:2.

Sample A4-SIDE203:1.5 is a field-duplicate of sample A4-SIDE69:1.5.

Sample A4-SIDE204:2.5 is a field-duplicate of sample A4-SIDE73:2.5.

Sample A4-SIDE217:2 is a field-duplicate of sample A4-SIDE134:2.

Sample A4-SIDE219:2 is a field duplicate of sample A4-SIDE171:2.

Sample A4-SIDE220:2 is a field duplicate of sample A4-SIDE176:2.

Confirmation samples and samples that were not overexcavated are listed in this table. Overexcavated samples are not listed.

Results reported from Fremont Analytical, Inc. work orders 2102417, 2109220, 2110054, 2110067, 2110251, 2110287, 2110520, 2112242, 2112277, 2112301, 2112321, 2201334, 2208229, 2208249, 2208276, 2208314, 2208325, 2208415, and 2208478.

— = Analysis not requested.

< = Analyte was not detected; reported as less than the reporting limit.

0.657 The detected concentration exceeds the regulatory limit for the associated analyte.

J = Estimated concentration, detected greater than the method detection limit and less than the reporting limit. Flag applied by the laboratory.

J* = Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson (*).

Table 5B: Area 4 Results for Dioxin/Furans

Analyte			1,2,3,4,6,7,8-HPCDD	1,2,3,4,6,7,8-HPCDF	1,2,3,4,7,8,9-HPCDF	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-HxCDF	1,2,3,7,8-PECDD	1,2,3,7,8-PECDF	2,3,4,6,7,8-HxCDF	2,3,4,7,8-PECDF	2,3,7,8-TCDD	2,3,7,8-TCDF	OCDD	OCDF	Total Dioxin/Furan TEQ†
MTCA Method B Direct Contact Cancer																				13
Location ID in Figure 6	Sample Name	Depth [ft bgs]																		13
A4-1	A4-1:8	8	1820	28.2	3.56	13.3	1.99 J	24.1	1.74 J	25.4	0.637 J	2.12 J	0.821 J	2 J	1.99 J	0.31 J	0.846	15700	108	33
A4-3	A4-3:8	8	5430 J*	1050 J*	62.4 J*	21.9 J*	14.1 J*	113 J*	6.39 J*	37.8 J	2.41 J	7.15	1.12 J	12.5 J	3.2	1.38	1.95	89300 J*	5260 J*	124
	A4-103:8†	8	1440 J*	230 J*	14.4 J*	13.7 J*	7.68 J*	40.8 J*	5.26 J*	22.3 J	1.54 J	6.07	2.32 J	6.93 J	4.34	1.41	4	19800 J*	1130 J*	42

NOTES:

† Sample A4-103:8 is field-duplicate sample of A4-3.

‡ For each sample, the TEQ was calculated by multiplying the concentration of each compound by its respective TEF and summing the results. When a compound was not detected, a value of 0.5 times the detection limit was multiplied by the corresponding TEF. Calculations were completed in accordance with Section 708 of the Model Toxics Control Act Regulation and Statute (Washington Administrative Code 173-340); TEFs were provided in Results are reported in pg/g.

Results reported from Fremont Analytical work order 2102417.

Orange shading indicates detected concentration exceeds the screening level.

J = Estimated concentration, detected greater than the method detection limit and less than the reporting level. Flag applied by the laboratory.

J* = Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson (*).

bgs = below ground surface; ft = feet; MTCA = Model Toxics Control Act; pg/g = picogram per gram; TEF = toxic equivalency factor; TEQ = total toxic equivalent concentration of 2,3,7,8-TCDD

Table 6: Area 5 Results of Final Confirmation Soil Samples

Analyte	Arsenic	Cadmium	Chromium	Lead	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268	Total PCB Aroclors	
Remediation Level (mg/kg)	14.6	5.1	2600	250										0.5	
Location ID	Depth [ft bgs]														
A5-1	11	3.69	—	—	1.81	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122
	12	2.38	—	—	1.22	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118
A5-2	8	5.10	—	—	33.4	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120
	9	2.21 JH*	—	—	2.79	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115
A5-3	11	0.612	—	—	8.92	<0.00933	<0.00933	<0.00933	<0.00933	<0.00933	<0.00933	<0.00933	<0.00933	<0.00933	<0.00933
A5-4	8	1.73 JH*	—	—	1.71	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121
	11	2.89	—	—	49.5	<0.0140	<0.0140	<0.0140	<0.0140	<0.0140	0.271	<0.0140	<0.0140	<0.0140	0.271
A5-5	12	3.65 J*	—	—	3.33	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114
	12†	4.28 JL*	—	—	7.00	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126
A5-6	9	0.844	—	—	2.67	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130
A5-7	11	2.92	—	—	181	<0.0116	<0.0116	<0.0116	<0.0116	<0.0116	0.197	<0.0116	<0.0116	<0.0116	0.197
	12	7.94	—	—	13.8	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122
A5-8	11	2.49	—	—	198	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	0.0657	<0.0110	<0.0110	<0.0110	0.0657
	12	5.41	—	—	11.0	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126
A5-9	11	0.919	—	—	1.48	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125
	12	2.36	—	—	2.06	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124
A5-10	11	0.459	—	—	1.22	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119
	12	1.02	—	—	1.69	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118
A5-SIDE2	2	7.38	0.0960 J	14.5	7.70	—	—	—	—	—	—	—	—	—	—
	7	5.00	—	—	42.9	<0.00780	<0.00780	<0.00780	<0.00780	<0.00963	<0.00963	<0.00963	<0.00963	<0.00963	<0.00963
A5-SIDE3	2	6.09	0.386	18.9	34.3	—	—	—	—	—	—	—	—	—	—
	6	6.17	—	—	151	<0.00713	<0.00713	<0.00713	<0.00713	<0.00880	0.108	<0.00880	<0.00880	<0.00880	0.108
A5-SIDE5	2	4.21	0.276 J	13.1	6.91	—	—	—	—	—	—	—	—	—	—
	6	3.70	—	—	2.04	<0.00851	<0.00851	<0.00851	<0.00851	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105

Table 6: Area 5 Results of Final Confirmation Soil Samples

Analyte	Arsenic	Cadmium	Chromium	Lead	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268	Total PCB Aroclors
Remediation Level (mg/kg)	14.6	5.1	2600	250										0.5
Location ID	Depth [ft bgs]													
A5-SIDE6	2	5.90	0.550 J	12.1	18.1	—	—	—	—	—	—	—	—	—
	2†	6.49	0.473 J	17.5	22.7	—	—	—	—	—	—	—	—	—
A5-SIDE7	6	4.02	—	—	2.09	<0.00971	<0.00971	<0.00971	<0.00971	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120
	3	5.44	0.0970 J	22.4	7.74	—	—	—	—	—	—	—	—	—
A5-SIDE8	6	2.88	—	—	3.66	<0.00879	<0.00879	<0.00879	<0.00879	<0.0108	<0.0108	<0.0108	<0.0108	<0.0108
	2	7.01	0.617 J	27.7	29.6	—	—	—	—	—	—	—	—	—
A5-SIDE9	6	7.97	—	—	3.35	<0.0103	<0.0103	<0.0103	<0.0103	<0.0127	<0.0127	<0.0127	<0.0127	<0.0127
	3	5.86	1.81 J	24.9	192	—	—	—	—	—	—	—	—	—
A5-SIDE11	7	4.61	—	—	131	<0.00816	<0.00816	<0.00816	<0.00816	<0.0101	0.0459 J	<0.0101	<0.0101	0.0459 J
	2	8.93	0.107 J	18.9	13.1	—	—	—	—	—	—	—	—	—
A5-SIDE12	7	4.72	—	—	10.4	<0.00787	<0.00787	<0.00787	<0.00787	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971
	3	2.28	0.0325 JH*	8.39	2.35	—	—	—	—	—	—	—	—	—
A5-SIDE13	7	6.09	—	—	4.39	<0.00878	<0.00878	<0.00878	<0.00878	<0.0108	<0.0108	<0.0108	<0.0108	<0.0108
	2	4.24	0.0928 J	10.6	9.65	—	—	—	—	—	—	—	—	—
A5-SIDE15	7	2.20	—	—	1.50 JH*	<0.00859	<0.00859	<0.00859	<0.00859	<0.0106	0.0183 J	<0.0106	<0.0106	0.0183 J
	3	5.86	0.185	11.0	21.6	—	—	—	—	—	—	—	—	—
A5-SIDE16	6	7.14	—	—	62.8	<0.00738	<0.00738	<0.00738	<0.00738	<0.00910	0.0897	<0.00910	<0.00910	0.0897
	2	6.26	0.200	12.2	32.1	—	—	—	—	—	—	—	—	—
A5-SIDE17	6	6.91	—	—	44.7	<0.00662	<0.00662	<0.00662	<0.00662	<0.00817	0.0644	<0.00817	<0.00817	0.0644
	2	10.3	0.400 J	28.3	41.3	—	—	—	—	—	—	—	—	—
A5-SIDE18	2	4.01	0.155 J	10.6	17.2	—	—	—	—	—	—	—	—	—
	7	8.17	—	—	54.5	<0.0282	<0.0282	<0.0282	<0.0282	<0.0282	<0.0282	<0.0282	<0.0282	<0.0282
A5-SIDE19	2	4.95	0.197 J	21.0	1.82	—	—	—	—	—	—	—	—	—
	6	11.5	—	—	3470 E	<0.0267	<0.0267	<0.0267	<0.0267	<0.0267	0.362	<0.0267	<0.0267	0.362

Table 6: Area 5 Results of Final Confirmation Soil Samples

Analyte	Arsenic	Cadmium	Chromium	Lead	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268	Total PCB Aroclors	
Remediation Level (mg/kg)	14.6	5.1	2600	250										0.5	
Location ID	Depth [ft bgs]														
A5-SIDE20	2	3.74	0.105 J	13.3	8.25	—	—	—	—	—	—	—	—	—	
	6	5.54	—	—	44.2	<0.0446	<0.0446	<0.0446	<0.0446	<0.0446	0.104	<0.0446	<0.0446	<0.0446	0.104

NOTES:

† Sample is a duplicate. See below for a list of duplicates and primary samples.

Sample A5-SIDE105:12 is duplicate sample of A5-5:12.

Sample A5-SIDE101:2 is field-duplicate sample of A5-SIDE6:2.

Results are reported in mg/kg.

Final confirmation samples are listed. Samples that were overexcavated are not listed. The following confirmation samples were overexcavated: A5-SIDE1, A5-SIDE4, A5-SIDE10, and A5-SIDE14.

Results reported from Fremont Analytical, Inc. work orders 2102417, 2103028, 2109234, 2109371, 2109508, 2111114, and 2208415.

< = Analyte was not detected; reported as less than the reporting limit.

Bold The detected concentration exceeds the regulatory limit for the associated analyte.

E = Result exceeds laboratory calibration range. Flag applied by the laboratory.

J = Estimated concentration, detected greater than the method detection limit and less than the reporting limit. Flag applied by the laboratory.

J* = Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson (*).

JH* = Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson (*).

JL* = Estimated concentration, biased low due to quality control failures. Flag applied by Shannon & Wilson (*).

bgs = below ground surface; ft = feet; mg/kg = milligram per kilogram; PCB = polychlorinated biphenyl

Table 7: Area 6 Results of Final Confirmation Soil Samples

Analyte		Arsenic
Remediation Level (mg/kg)		14.6
Location ID	Depth (ft bgs)	
A6-BOT1	6	0.876
A6-SIDE1	2	2.62
	5	6.56
A6-SIDE2	2	3.38
	5	2.71
A6-SIDE3	5	3.24
	5 [†]	2.76
A6-SIDE4	2	8.16
	5	8.10
A6-SIDE5	2	8.99

NOTES:

Results are reported in mg/kg.

Final confirmation samples are listed. Samples that were overexcavated are not listed.

Results reported from Fremont Analytical, Inc. work orders 2110067 and 2110219.

[†] Sample A6-SIDE100-5 is field-duplicate sample of A6-SIDE3.5.

bgs = below ground surface; ft = feet; mg/kg = milligram per kilogram

Table 8: Area 7 Results of Final Confirmation Soil Samples

Location ID	Analyte	Gasoline-Range Organics
	Remediation Level (mg/kg)	250
	Depth (ft bgs)	
A7-1	9	<10.8
	10	<6.73
A7-SIDE1	3	67.1 N*
	7	3.17 J*
A7-SIDE2	3	<1.17
	7	<1.35
	7†	<1.52
A7-SIDE3	3	<1.29
	7	<1.22
A7-SIDE4	3	23.8 N*
	7	3.30 J

NOTES:

† Sample A7-SIDE100:7 is field-duplicate sample of A7-SIDE2:7.

Results are reported in mg/kg.

Final confirmation samples are listed. Samples that were overexcavated are not listed.

Results reported from Fremont Analytical, Inc. work orders 2102417 and 2110067.

< = Analyte was not detected; reported as less than the reporting limit.

J = Estimated concentration, detected greater than the method detection limit and less than the reporting level.

Flag applied by the laboratory.

J* = Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson (*).

N* = Laboratory noted that Gasoline-Range Organics (C6 - C12) chromatographic patterns indicates that detections are due to the presence of unresolved, non-target compounds in gasoline-range. Results are not consistent with a known petroleum distillate. Flag applied by Shannon & Wilson (*).

bgs = below ground surface; ft = feet; mg/kg = milligram per kilogram

Table 9: Area 8 Results of Final Confirmation Soil Samples

Analyte	Gasoline-Range Organics	
Remediation Level (mg/kg)	250	
Location ID	Depth (ft bgs)	
A8-1	10	12800
	10†	11500
	11	18800
A8-SIDE1	3	<1.14
	7	26.3 N*
A8-SIDE2	3	5.79 J
	7	1870
A8-SIDE3	3	22.9 N*
	3†	3.21 J
	7	5.33 J
A8-SIDE4	8	2950

NOTES:

† Sample is a duplicate. See below for a list of duplicates and primary samples.

Sample A8-101:10 is a field-duplicate sample of A8-1:10.

Sample A8-SIDE100:3 is a field-duplicate sample of A8-3:3.

Results are reported in mg/kg.

Final confirmation samples are listed. Samples that were overexcavated are not listed.

Results reported from Fremont Analytical, Inc. work orders 2102417 and 2110067.

Bold The detected concentration exceeds the regulatory limit for the associated analyte.

< = Analyte was not detected; reported as less than the reporting limit.

J = Estimated concentration, detected greater than the method detection limit and less than the reporting level. Flag applied by the laboratory.

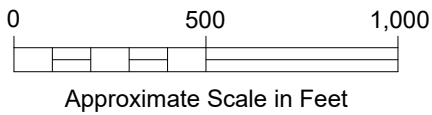
N* = Laboratory noted that Gasoline-Range Organics (C6 - C12) chromatographic patterns indicates that detections are due to the presence of unresolved, non-target compounds in gasoline-range. Results are not consistent with a known petroleum distillate. Flag applied by Shannon & Wilson (*).

bgs = below ground surface; ft = feet; mg/kg = milligram per kilogram

Table 10: Overexcavated Samples

Location ID	Sample ID	Sample Date	Depth (ft bgs)	TPH		HVOCs			PAHs						PCBs						Metals														
				Gasoline Range Organics	TPH as Gasoline	Tetrachloroethene (PCE)	Trichloroethene (TCE)	Vinyl chloride	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268	Total PCBs	Arsenic	Cadmium	Chromium	Copper	Lead					
Area 6 Samples																																			
A6-SIDE3	A6-SIDE3:2	10/5/2021	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	72.3	—	—	—	—	
SFA-S15-3	SFA-S15-3_822004	8/2/2004	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	58.6	0.154 J	17.9	—	11.6		
Area 7 Samples																																			
FWW-1	FWW-1-1-2.5	4/7/2004	1-2.5	—	—	<0.00103	<0.00103	<0.00103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.50
FWW-1	FWW-1-4-5.5	4/7/2004	4-5.5	<5.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.65	
FWW-1	FWW-1-6.5-8	4/7/2004	6.5-8	1860	—	<0.125	<0.125	<0.125	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.55	
Area 8 Samples																																			
A1	A1-0.5-2	4/19/2004	0.5-2	—	—	<0.00106	0.0155	<0.00106	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	56.6
A1	A1-3-4.5_20040419	4/19/2004	3-4.5	—	—	—	—	—	0.00283 J	<0.00110	0.00425 J	0.00283 J	0.00354 J	<0.00100	<0.00390	<0.00348	<0.0133	<0.00576	<0.00208	<0.00178	<0.00149	<0.000870	<0.00146	<0.00620	<0.00576	1.33	0.304J	15.6	10.2	11.7	—	—	—	—	
A1	A1-5.5-7	4/19/2004	5.5-7	<5.36	—	<0.00107	<0.00107	<0.00107	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
A1	A1-7.5-8.5	4/19/2004	7.5-8.5	5180	—	<0.0693	<0.0693	<0.0693	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
A8-1	A8-1:9	2/25/2021	9	—	314	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
MW-44B	091911-MW-44B-SB-7.5	9/19/2011	7-8	8300	—	—	—	—	0.0680	0.0290	0.0380	0.0280	0.0960	0.00610	0.0180 J	<0.00380	<0.00380	<0.00380	<0.00380	0.00760	0.0140	0.00860	—	—	0.0302	1.90	<0.100	12.8	19.4	2.60	—	—	—	—	
MW-44B	091911-MW-44B-SB-10	9/19/2011	9-10	530	—	—	—	—	0.00880	0.0130	<0.0190	<0.0190	0.0110	<0.00460	0.00630	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	—	—	<0.00370	2.50	<0.100	12.1	16.1	2.60	—	—	—	—	

NOTES:
 Results are reported in mg/kg.
 < = Analyte was not detected; reported as less than the reporting limit.
 ‡ - Reported by laboratory as total PCB arcolors calculated by adding all detections. Detections reported by laboratory as Aroclor 1254.
 E = Result exceeds laboratory calibration range. Flag applied by the laboratory.
 J = Estimated concentration, detected greater than the method detection limit and less than the reporting level. Flag applied by the laboratory.
 J* = Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson (*).
 JH* = Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson (*).
 JL* = Estimated concentration, biased low due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*).
 N = There is evidence the analyte is present in the sample. Tentatively identified analyte.
 N* = Laboratory noted that Gasoline-Range Organics (C6 - C12) chromatographic patterns indicates that detections are due to the presence of unresolved, non-target compounds in gasoline-range. Results are not consistent with a known petroleum distillate. Flag applied by Shannon & Wilson (*).
 bgs = below ground surface; ft = feet; mg/kg = milligram per kilogram
 R = Sample result rejected due to being non detect and having no surrogate recovery.
 Y = Estimated concentration.



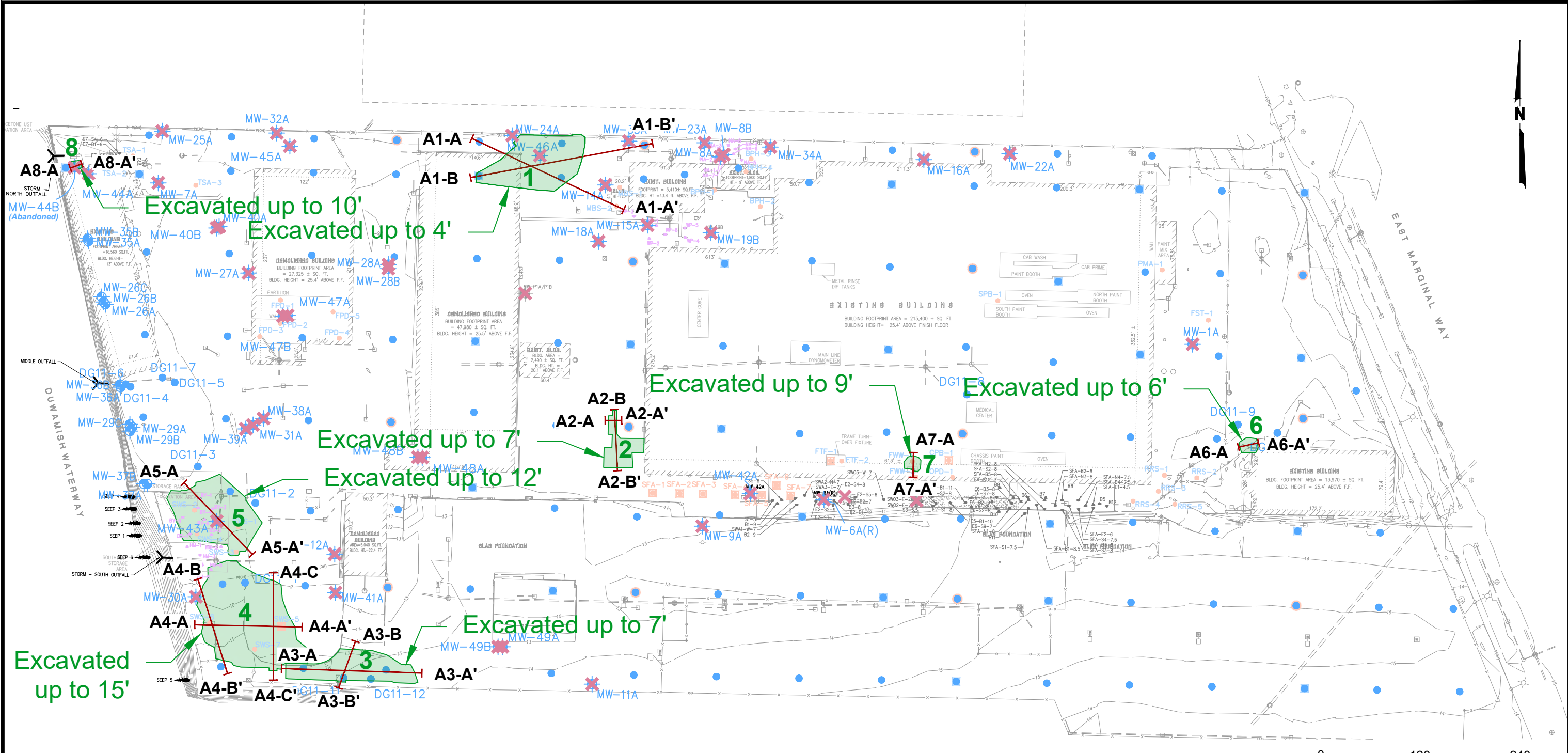
FINAL Compliance Monitoring Report
Remedial Excavations
8801 East Marginal Way S.
Tukwila, Washington

VICINITY MAP

October 2023 108056-004



FIG. 1



LEGEND

- 3 Estimated Excavation Extents with Area Number Designation
- Historical Soil Sample
- Groundwater Monitoring Well
- ✱ Monitoring Wells (Decommissioned)
- - - Fenceline
- ⋅ Feet
- A1-A |—| Excavation Profile

- NOTES**
1. Exploration locations are approximate.
 2. Base map and historic exploration points are from Kennedy-Jenks Figures 2 and 3, 046001.00/Report/Po4SK003.
 3. Excavation Limits are based from the files J1743,07 09-14-22.dwg, received September 14, 2022, and J1743.07 12-23-21.dwg, received January 31, 2022.

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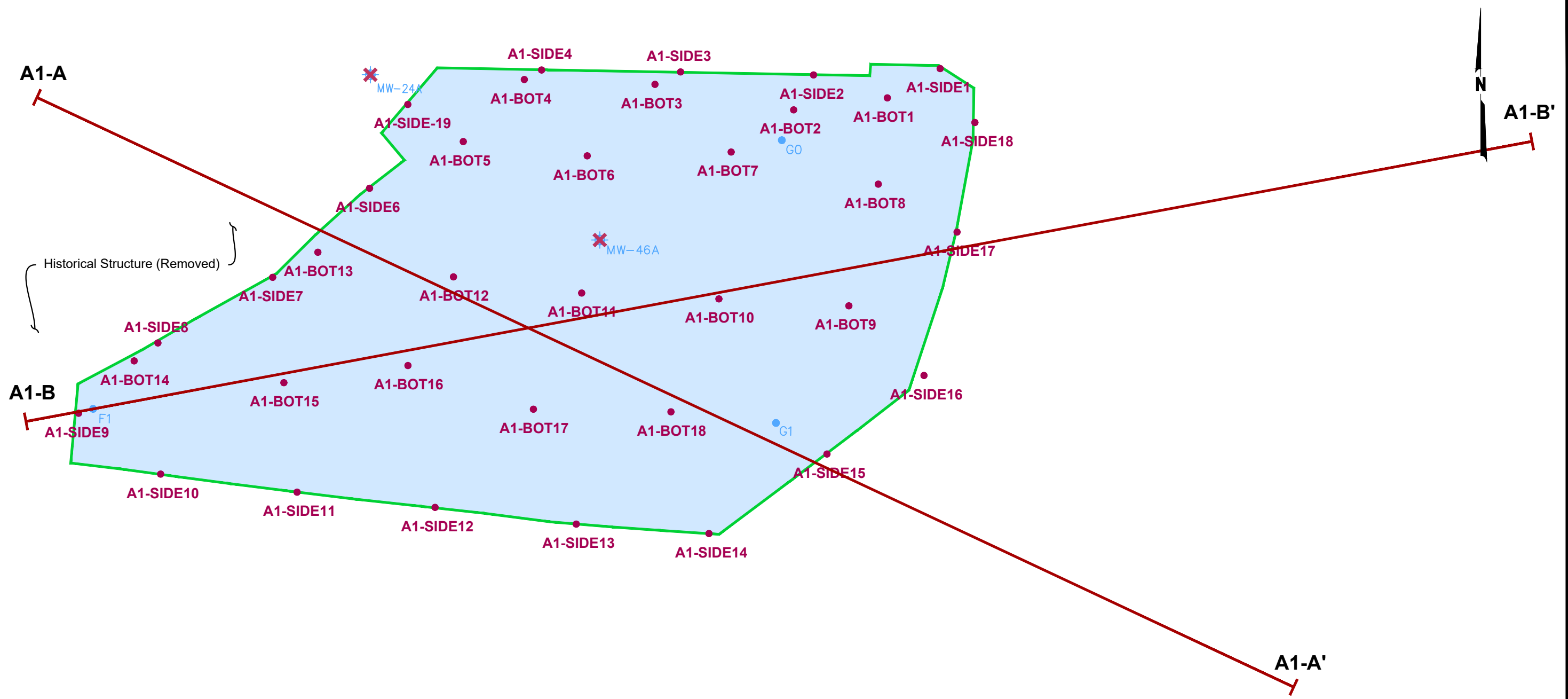
**REMEDIAL ACTION
EXCAVATIONS**

October 2023 108056-004

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FIG. 2

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LEGEND

- Extents of Excavation with Approximate Depth
- A1-SIDE10** ● Confirmation Soil Sample
- F1** ● Historical Soil Sample (Removed)
- MW-24A** ✖ Groundwater Monitoring Well (Decommissioned)
- 4' Excavation Depth
- A1-A** — Excavation Profile

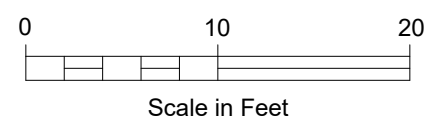
ABBREVIATIONS

- TCE = Trichloroethylene
- PCE = Tetrachloroethene
- VC = Vinyl Chloride
- mg/kg = milligrams per kilograms
- ' = Feet

NOTES

1. Locations and depths are approximate.
2. Base map and historic exploration points are from Kennedy-Jenks Figures 2 and 3, 046001.00/Report/Po4SK003.
3. Established project specific remediation level (mg/kg):
4. The locations of final confirmation samples are shown in the figure. Locations of over-excavated confirmation samples are not shown.
5. Exceedances of the remediation level for PCE, TCE, or VC were not detected in the final confirmation samples.

PCE	5
TCE	5
VC	5



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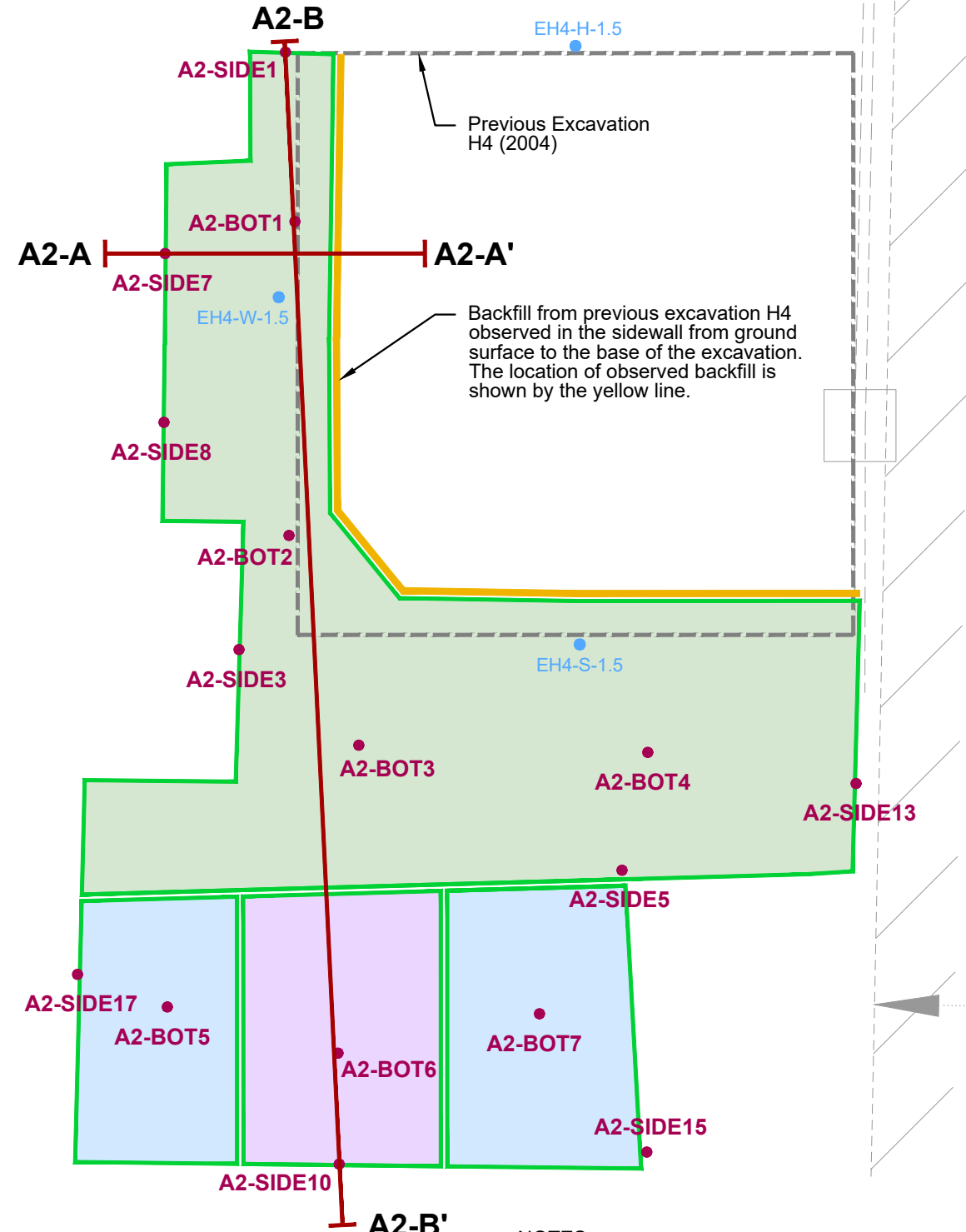
AREA 1 PLAN-VIEW DETAIL

October 2023 108056-004

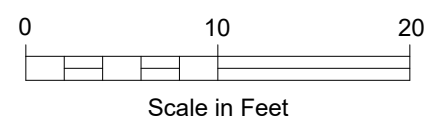
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FIG. 3

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Former Warehouse (Removed)



- LEGEND**
- Extents of Excavation
 - A2-SIDE17** ● Confirmation Soil Sample
 - EH4-W-1.5** ● Historical Soil Sample (Removed)
 - 2.5' Excavation Depth
 - 4' Excavation Depth
 - 7' Excavation Depth
 - A2-A** |—| Excavation Profile

- ABBREVIATIONS**
- cPAHs = Carcinogenic Polycyclic Aromatic Hydrocarbons
 - TEQ = Toxicity Equivalency Quotient
 - ' = Feet

- NOTES**
1. Locations and depths are approximate.
 2. Base map and historic exploration points are from Kennedy-Jenks Figures 2 and 3, 046001.00/Report/Po4SK003.
 3. Established project specific remediation level (mg/kg):
- | | |
|-----------------|-----|
| Total cPAHs TEQ | 0.6 |
|-----------------|-----|
4. The locations of final confirmation samples are shown in the figure. Locations of over-excavated confirmation samples are not shown.
 5. Exceedances of the remediation level for Total cPAHs TEQ were not detected in the final confirmation samples.

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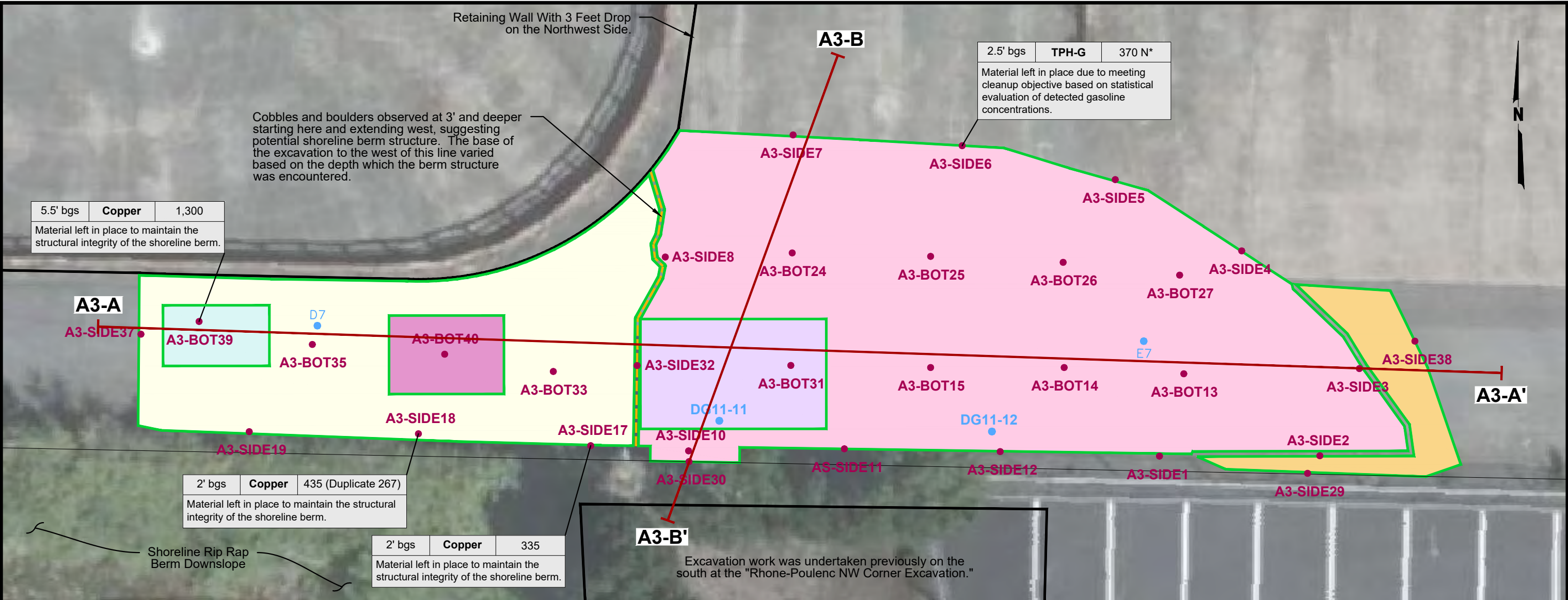
AREA 2 PLAN-VIEW DETAIL

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FIG. 4

Filename: C:\Users\jrs\CAD Group Dropbox\Jdrive_SEA\108056\004\108056-004 RAE.dwg Layout: Figure 5 Date: 10-16-2023 Login: JRS



Cobbles and boulders observed at 3' and deeper starting here and extending west, suggesting potential shoreline berm structure. The base of the excavation to the west of this line varied based on the depth which the berm structure was encountered.

5.5' bgs **Copper** 1,300
Material left in place to maintain the structural integrity of the shoreline berm.

2.5' bgs **TPH-G** 370 N*
Material left in place due to meeting cleanup objective based on statistical evaluation of detected gasoline concentrations.

2' bgs **Copper** 435 (Duplicate 267)
Material left in place to maintain the structural integrity of the shoreline berm.

2' bgs **Copper** 335
Material left in place to maintain the structural integrity of the shoreline berm.

A3-B'
Excavation work was undertaken previously on the south at the "Rhône-Poulenc NW Corner Excavation."

LEGEND

	Extents of Excavation		5.5' Excavation Depth
	Confirmation Soil Sample		6' Excavation Depth
	Historical Soil Sample (Removed)		6.5' Excavation Depth
	4'-5' Excavation Depth		7' Excavation Depth
	5' Bench Excavation Depth		Excavation Profile

ABBREVIATIONS

PCBs = Polychlorinated Biphenyls
 mg/kg = milligrams per kilograms
 bgs = below ground surface
 ' = Feet
 N* = Laboratory noted that Gasoline Range Organics (C6 - C12) chromatographic patterns indicated that detections were due to the presence of unresolved, non-target compounds in the gasoline range. Results are not consistent with a known petroleum distillate.
 TPH-G = Total Petroleum Hydrocarbons as Gasoline Range

NOTES

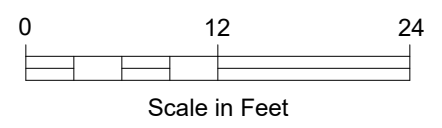
- Locations and depths are approximate.
- Samples were analyzed for PCBs, copper, and gasoline range total petroleum hydrocarbons. Detected concentrations (mg/kg) in excess of screening levels are shown.
- Established project specific remediation level (mg/kg):

Total PCB Aroclors	0.5
Copper	250

- Established project specific cleanup level (mg/kg):

TPH-G	250
--------------	-----

- The locations of final confirmation samples are shown in the figure. Locations of over-excavated confirmation samples are not shown.
- Exceedances of the remediation levels in final confirmation samples are shown in callouts in the figure.



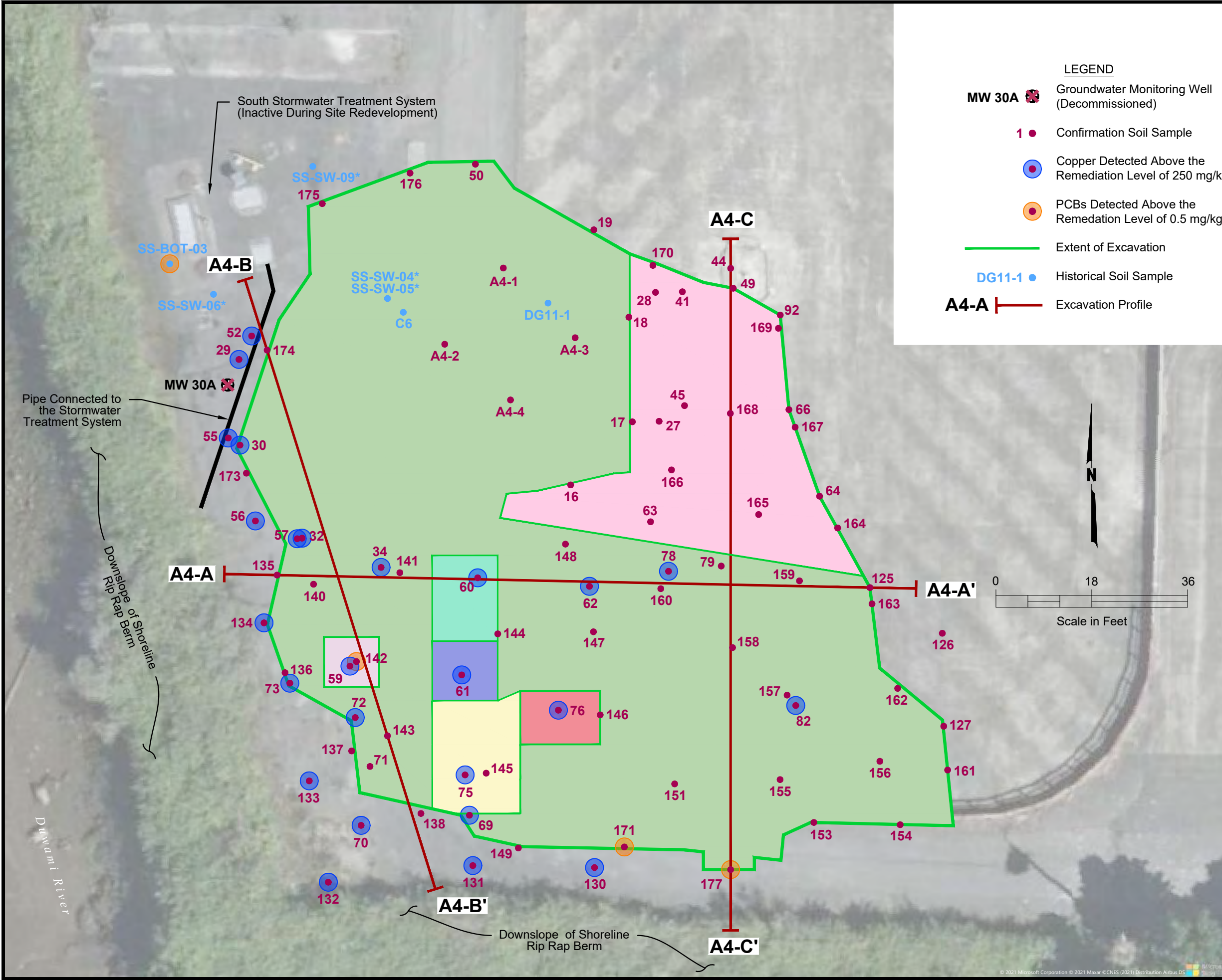
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AREA 3 PLAN-VIEW DETAIL

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 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 5



LEGEND

- MW 30A Groundwater Monitoring Well (Decommissioned)
- 1 Confirmation Soil Sample
- Copper Detected Above the Remediation Level of 250 mg/kg
- PCBs Detected Above the Remediation Level of 0.5 mg/kg
- Extent of Excavation
- DG11-1 Historical Soil Sample
- A4-A Excavation Profile
- 6' Excavation Depth
- 8' Bench Excavation Depth
- 10' Excavation Depth
- 11' Excavation Depth
- 13' Excavation Depth
- 14' Excavation Depth
- 15' Excavation Depth

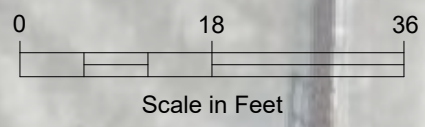
ABBREVIATIONS

mg/kg = milligrams per kilogram
 PCBs = polychlorinated biphenyls

* Sample collected during installation of the stormwater treatment system in 2007. Reported in AMEC, 2012, Final Remedial Investigation Report, 8801 East Marginal Way South, Tukwila, Washington.

NOTES

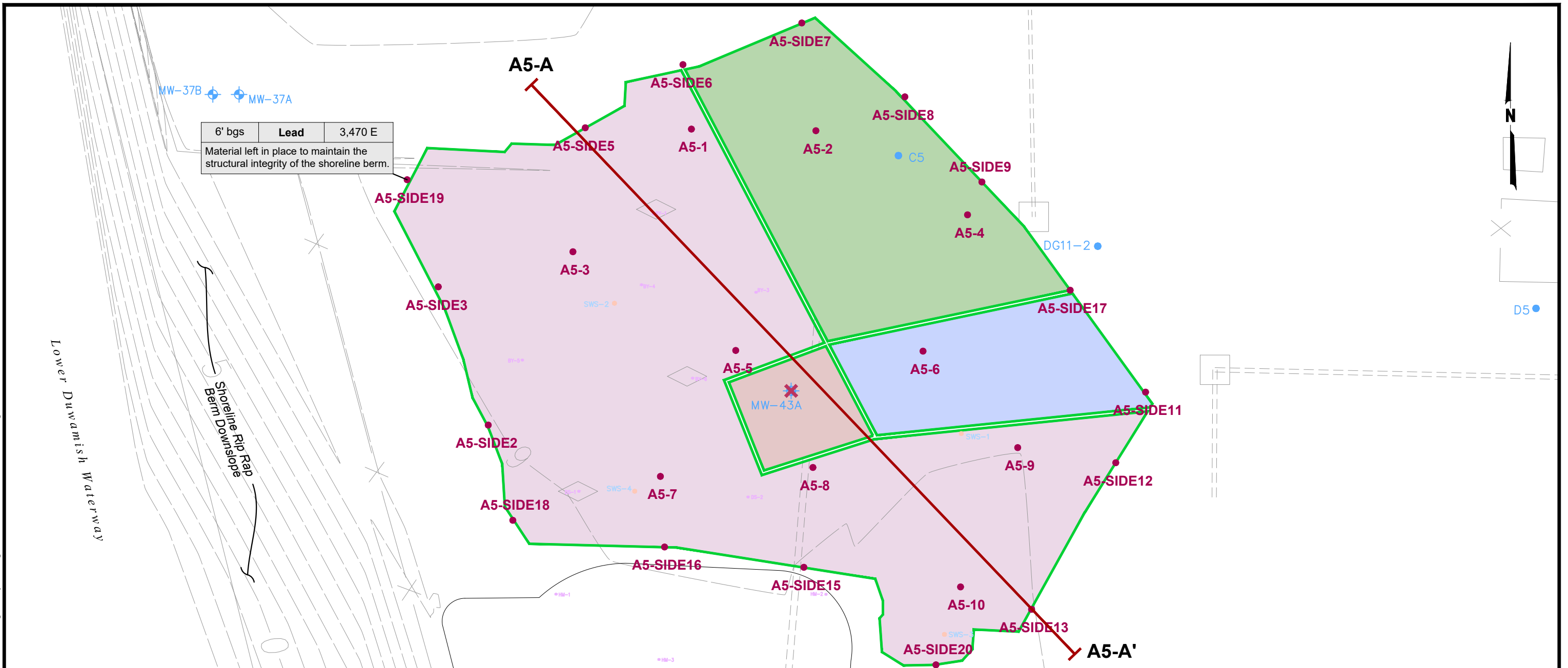
1. Sample designations with numbers (##) only are abbreviated. Sample designations are A4-SIDE## or A4-BOT##.
2. Locations are approximate.
3. The locations of confirmation samples and investigation samples are shown in this figure. Overexcavated samples are not shown.



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**AREA 4 PLAN
 VIEW DETAIL**

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6' bgs	Lead	3,470 E
--------	------	---------

Material left in place to maintain the structural integrity of the shoreline berm.

LEGEND

- ▭ Extents of Excavation
- A5-SIDE1 Confirmation Soil Sample
- DG11-2 Historical Soil Sample
- ⊕ MW-37A Groundwater Monitoring Well
- ⊗ MW-43A Groundwater Monitoring Well (Decommissioned)
- ▭ 8' Excavation Depth
- ▭ 9' Excavation Depth
- ▭ 11' Excavation Depth
- ▭ 12' Excavation Depth
- A5-A Excavation Profile

ABBREVIATIONS

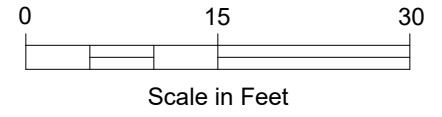
- PCBs = Polychlorinated Biphenyls
- mg/kg = milligrams per kilograms
- E = Result exceeds laboratory calibration range. Flag applied by laboratory.

NOTES

1. Locations and depths are approximate.
2. Base map and historic exploration points are from Kennedy-Jenks Figures 2 and 3, 046001.00/Report/Po4SK003.
3. Concentrations are expressed in milligrams per kilograms (mg/kg).
4. Established project specific remediation levels (mg/kg):

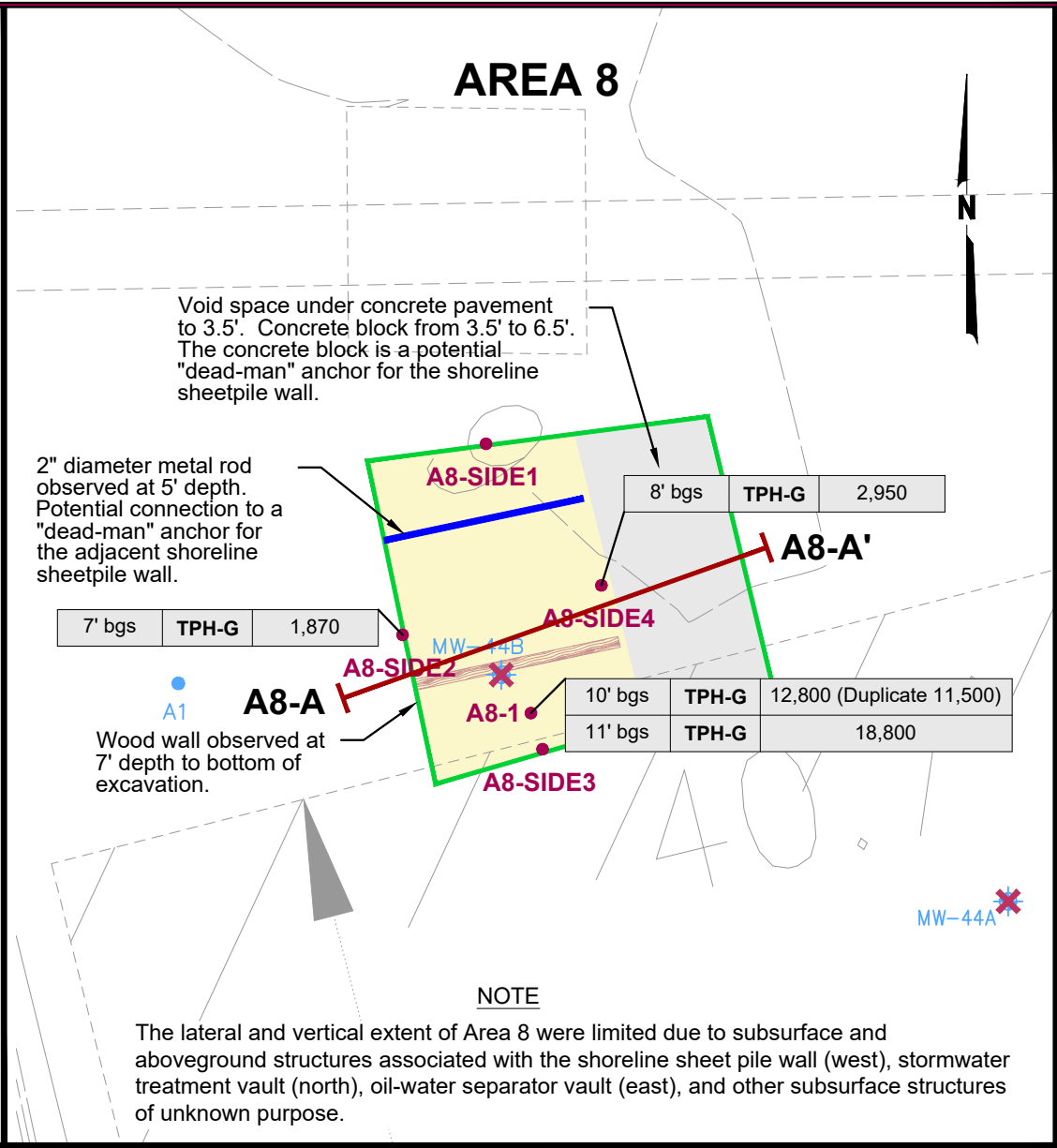
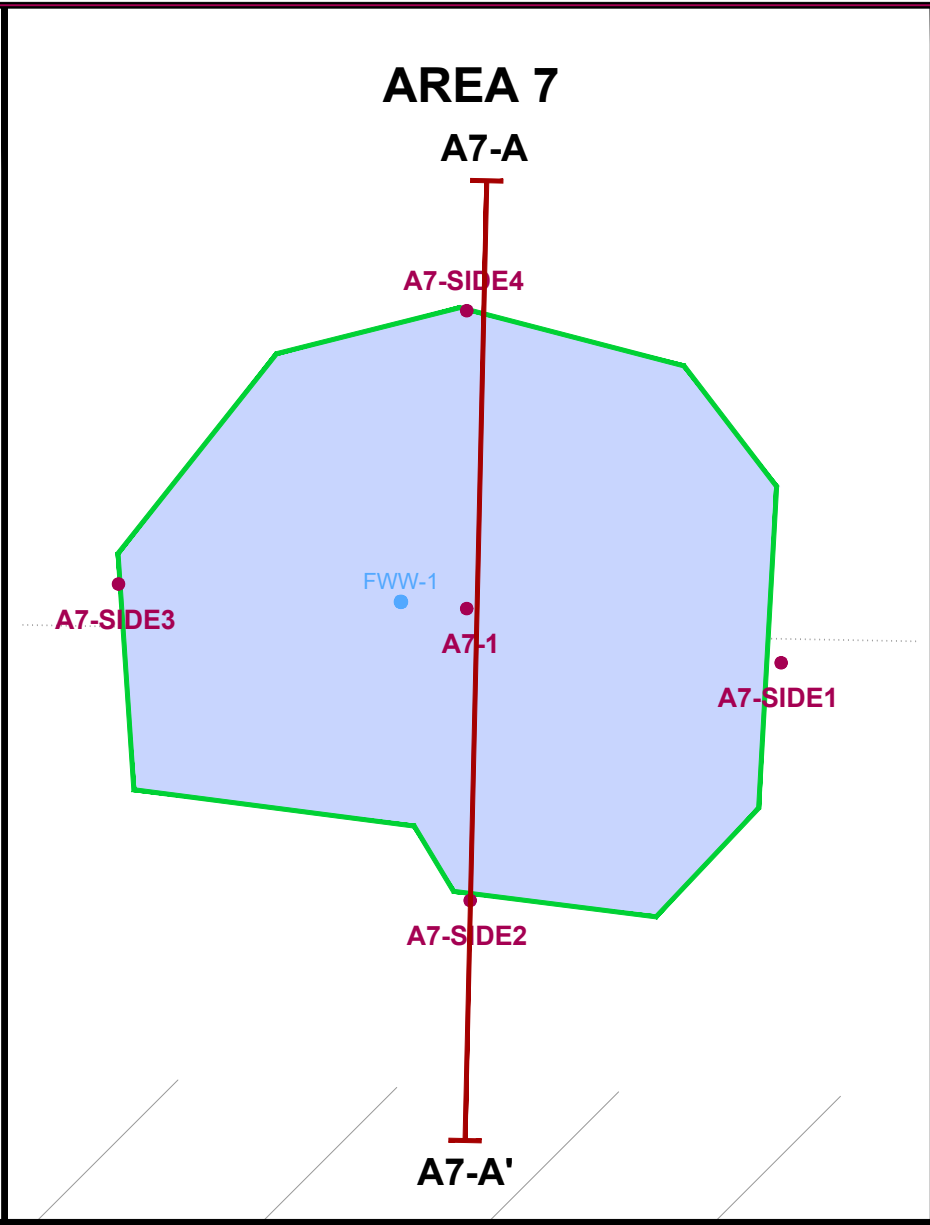
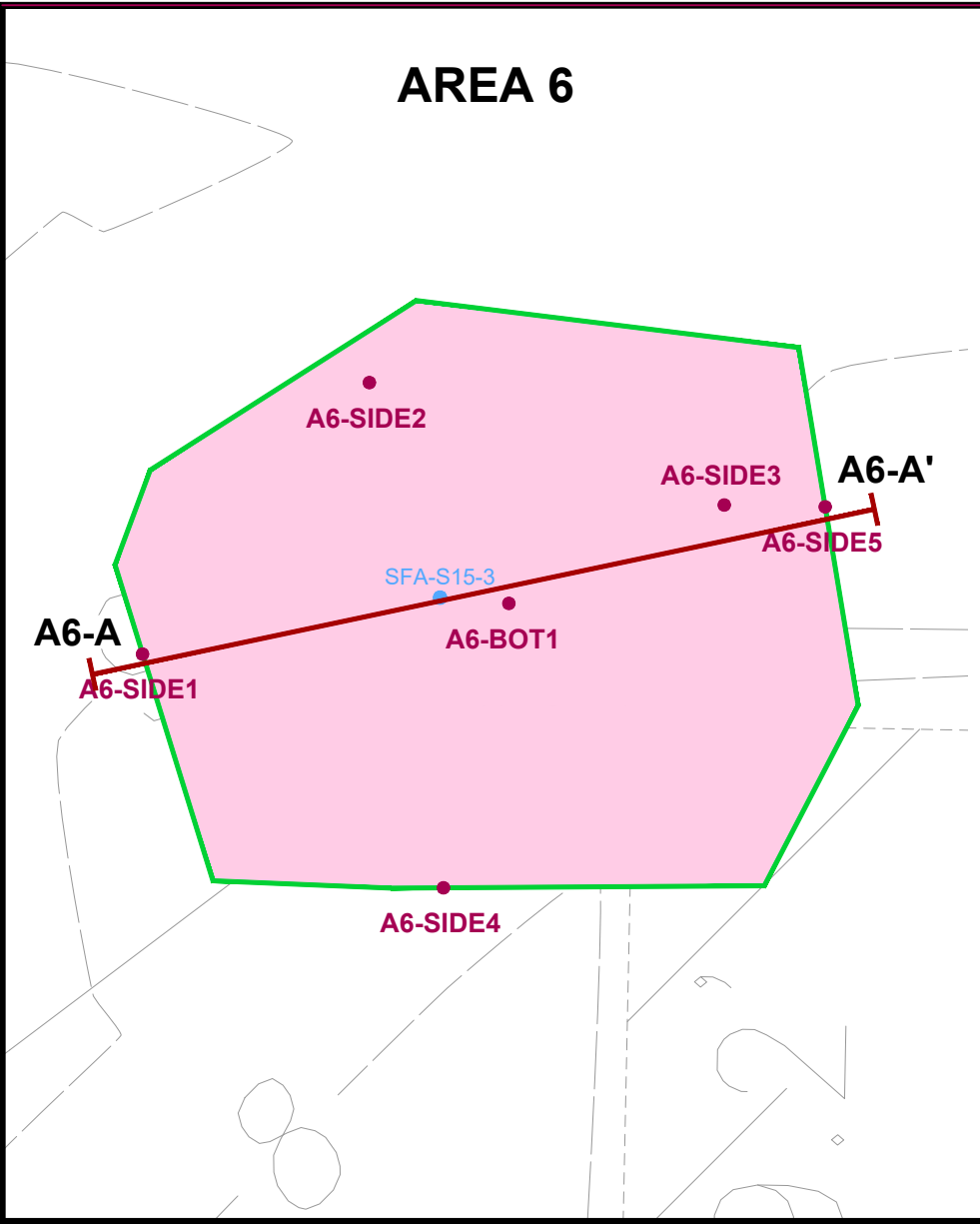
Total PCB Aroclors	0.5
Arsenic	14.6
5. Established project specific cleanup levels (mg/kg):

Lead	250
Cadmium	5.1
Chromium	2,600
6. Confirmation soil samples collected in shallow soil (1 to 5 feet depth) were analyzed for arsenic, cadmium, chromium, and lead. Confirmation soil samples collected from deeper depths were analyzed for arsenic, lead, and PCBs.
7. The locations of final confirmation samples are shown in the figure. Locations of over-excavated confirmation samples are not shown.
8. Exceedances of the cleanup levels in final confirmation samples are shown in callouts in the figure.



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AREA 5 PLAN-VIEW DETAIL	
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SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	FIG. 7

Filename: C:\Users\jrs\CAD Group\Dropbox\Jdrive_SEA\108056\004\108056-004 RAE.dwg Layout: Figure 8 Date: 10-16-2023 Login: JRS



LEGEND

- Extents of Excavation
- Confirmation Soil Sample
- Historical Soil Sample (Removed)
- Groundwater Monitoring Well (Decommissioned)
- 3.5' Excavation Depth
- 6' Excavation Depth
- 9' Excavation Depth
- 10' Excavation Depth
- Excavation Profile

ABBREVIATIONS

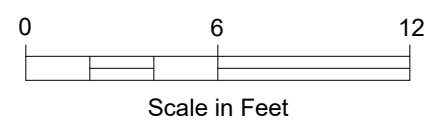
mg/kg = milligrams per kilograms
 bgs = below ground surface
 ' = Feet
 TPH-G = Total Petroleum Hydrocarbons as Gasoline Range

NOTES

- Locations and depths are approximate.
- Base map and historic exploration points are from Kennedy-Jenks Figures 2 and 3, 046001.00/Report/Po4SK003.
- Established project specific remediation level (mg/kg):

Arsenic	14.6
---------	------
- Established project specific cleanup level (mg/kg):

TPH-G	250
-------	-----
- The locations of final confirmation samples are shown in the figure. Locations of over-excavated confirmation samples are not shown.
- Exceedances of the cleanup levels in final confirmation samples are shown in callouts in the figure.



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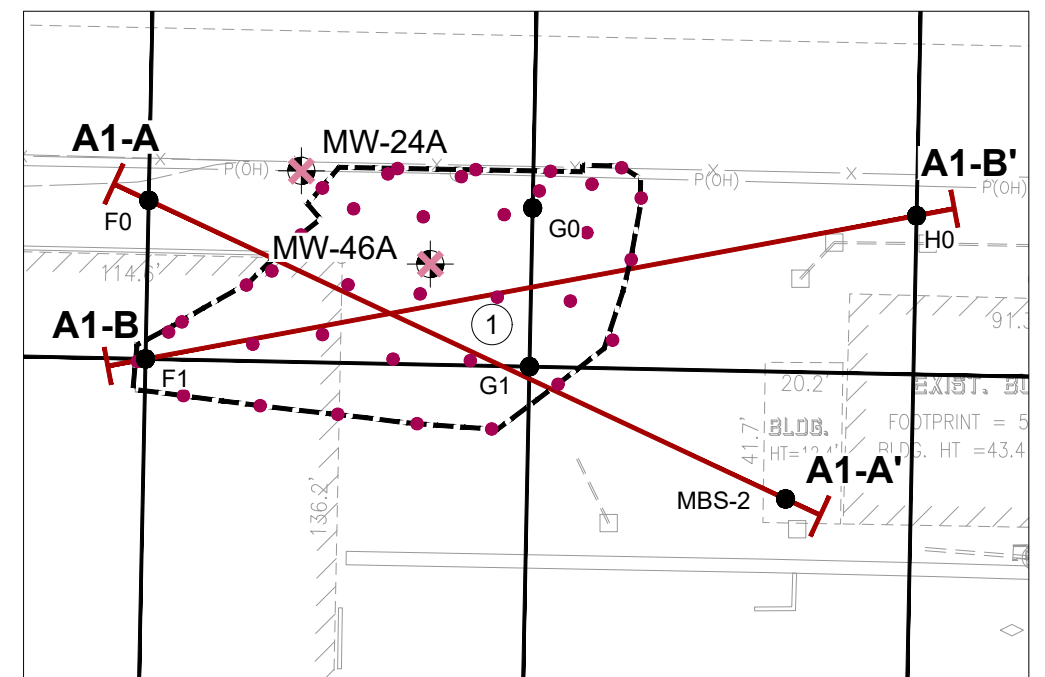
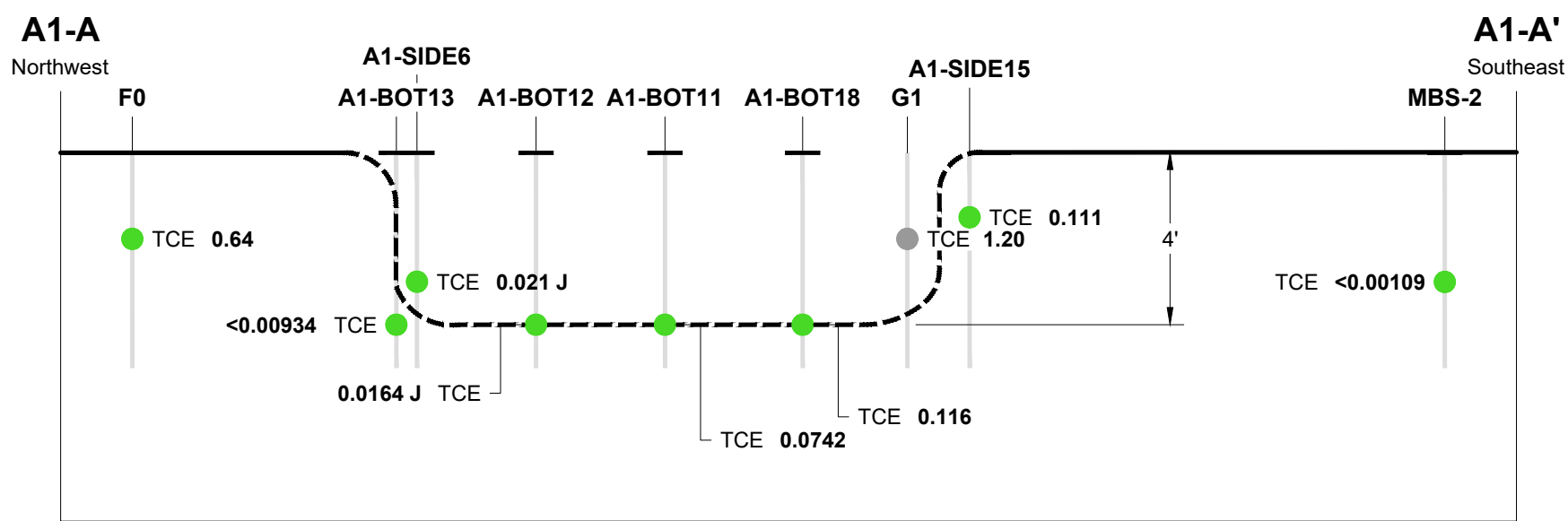
**AREAS 6, 7, AND 8
 PLAN-VIEW DETAIL**

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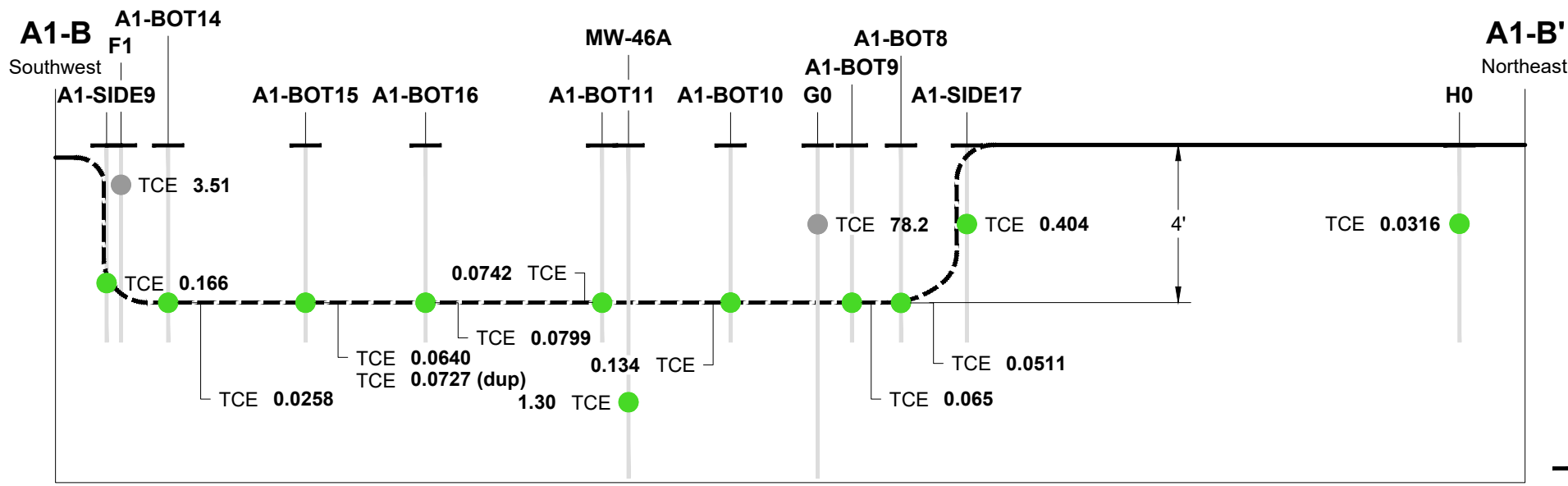
FIG. 8

Filename: C:\Users\jrs\CAD Group\Dropbox\JDrive_SEA\108056\004\108056-004 Excavation Profiles.dwg Layout: Figure 9 Date: 10-16-2023 Login: JRS



PLAN - PROFILE LOCATIONS
0 50 100
Scale in Feet

- PLAN LEGEND**
- Monitoring Wells (Decommissioned)
 - F1 Historical Soil Sample
 - Confirmation Soil Sample
 - Excavation
 - A1-A Excavation Profile Location



Vertical Scale in Feet: 0, 4, 8
Horizontal Scale in Feet: 0, 24, 48
Vertical Exaggeration = 6X

APPLICABLE SCREENING CRITERIA

ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)	VALUE (mg/kg)
PCE	RL	5
TCE	RL	5
VC	RL	5

PROFILE LEGEND

- E6 Sample Location Designation
- Excavation Limits
- Data Result in mg/kg
- Data Result in mg/kg (Excavated)
- mg/kg
- Not Detected Above Laboratory Reporting Limit

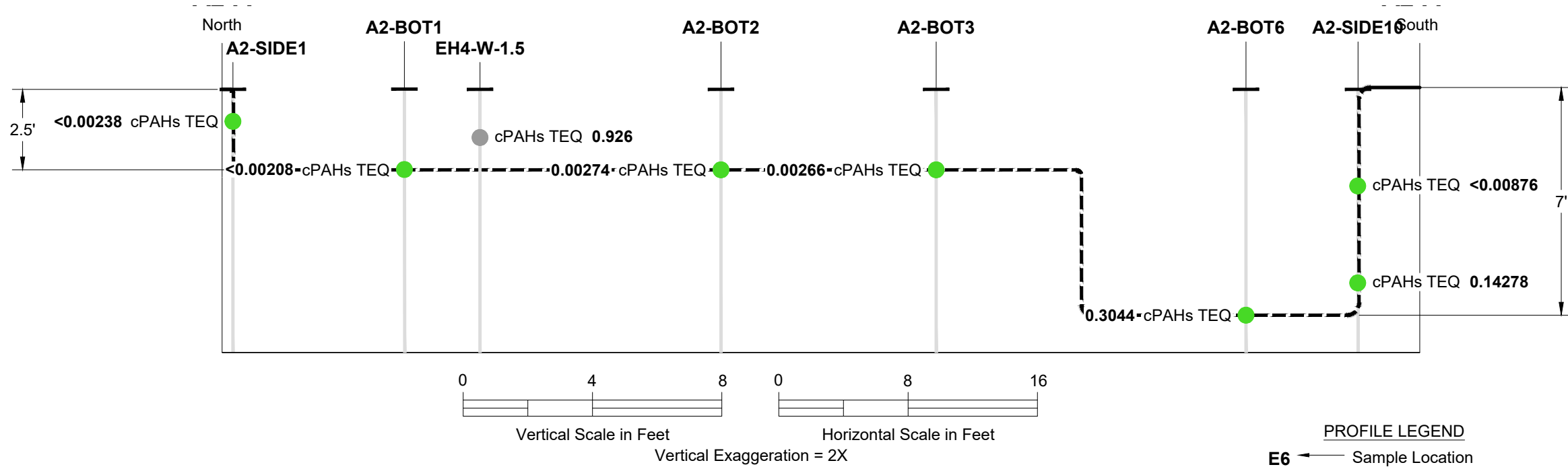
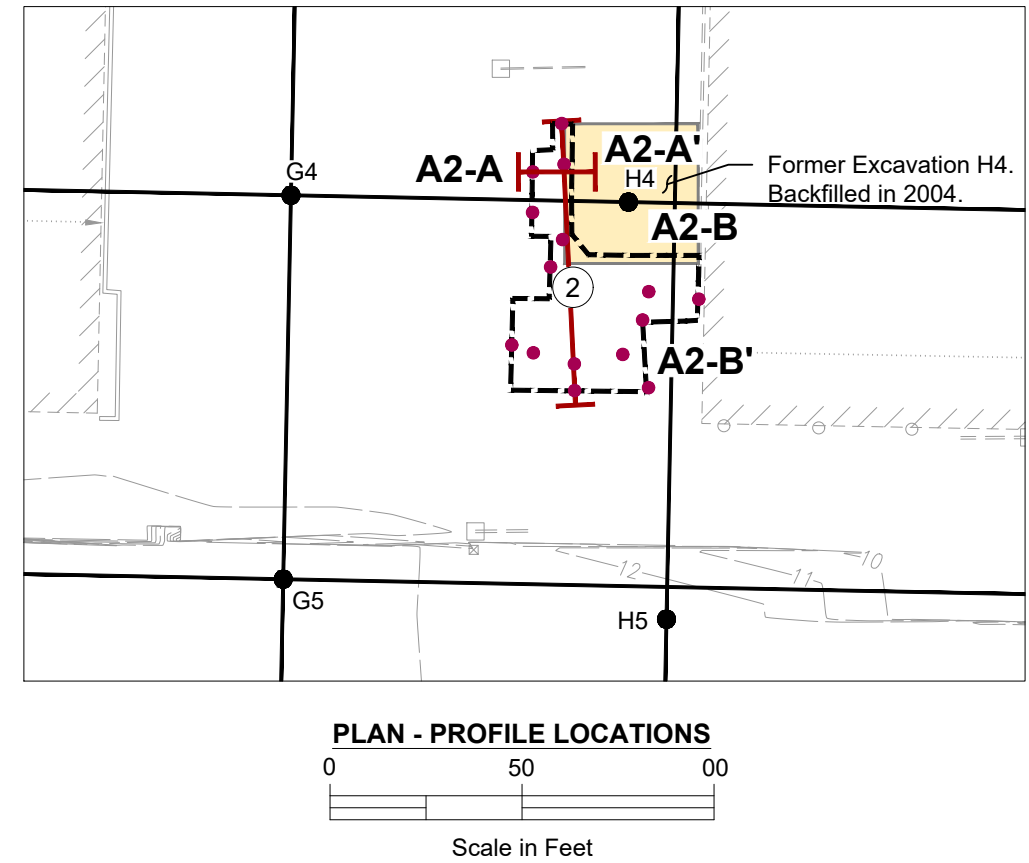
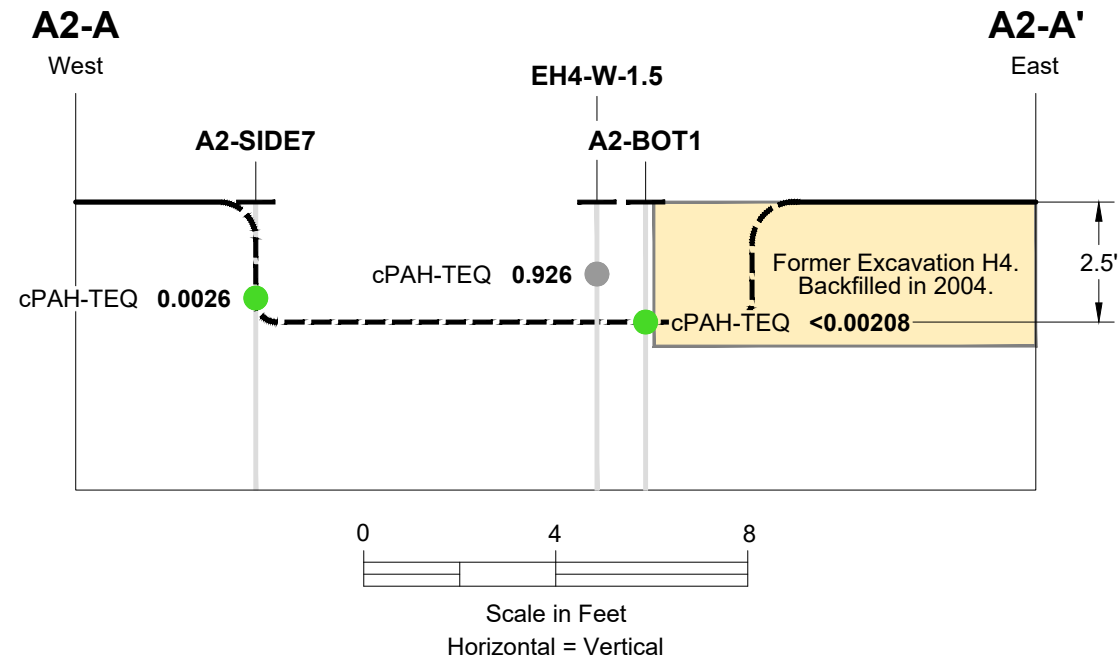
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AREA 1 CROSS SECTIONS

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FIG. 9



- PLAN LEGEND**
- H4 ● Historical Soil Sample
 - Confirmation Soil Sample
 - Excavation
 - A2-A** — Excavation Profile Location

APPLICABLE SCREENING CRITERIA

ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)	VALUE (mg/kg)
Total cPAH TEQ	RL	0.6

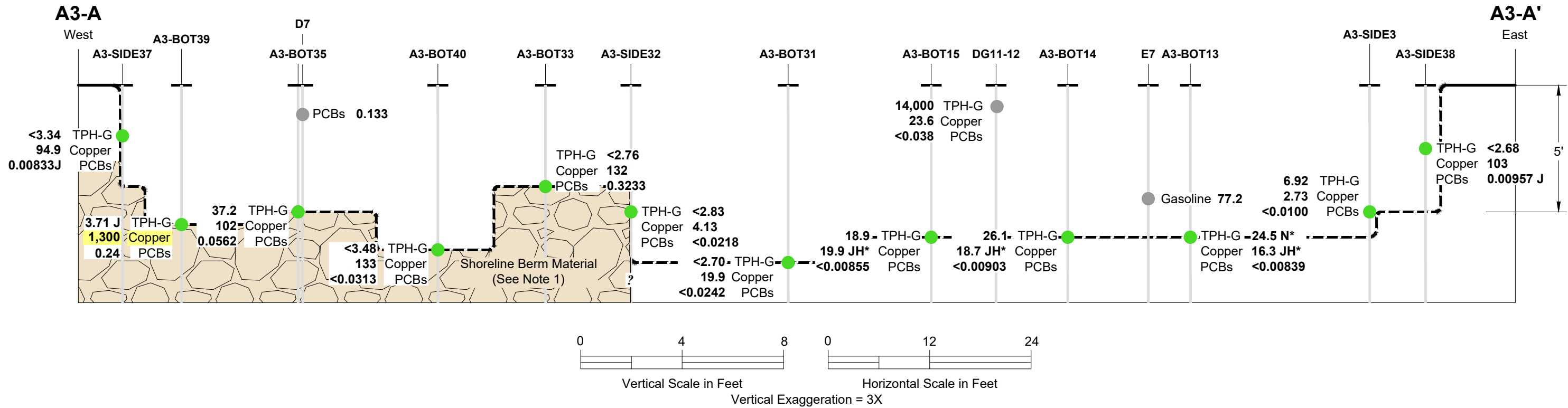
- PROFILE LEGEND**
- E6 ← Sample Location Designation
 - Excavation Limits
 - Data Result in mg/kg
 - Data Result in mg/kg (Excavated)
 - mg/kg ← Milligrams per Kilogram
 - ← Indicates Not Detected at or Above Value Shown

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AREA 2 CROSS SECTION

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SHANNON & WILSON, INC. **FIG. 10**



PROFILE LEGEND

- E6 ← Sample Location Designation
- Excavation Limits
- Data Result in mg/kg
- Data Result in mg/kg (Excavated)
- mg/kg ← Milligrams per Kilogram
- ← Indicates Not Detected at or Above Value Shown
- 1,300 Copper** Yellow Highlight Indicates Exceedance of Remediation Level

APPLICABLE SCREENING CRITERIA

ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)	VALUE (mg/kg)
TPH-G	CUL	250
Copper	RL	250
PCBs	RL	0.5

PLAN LEGEND

- E7 ● Historical Soil Sample
- Confirmation Soil Sample
- Excavation
- A3-A** |--- Excavation Profile Location

ABBREVIATIONS

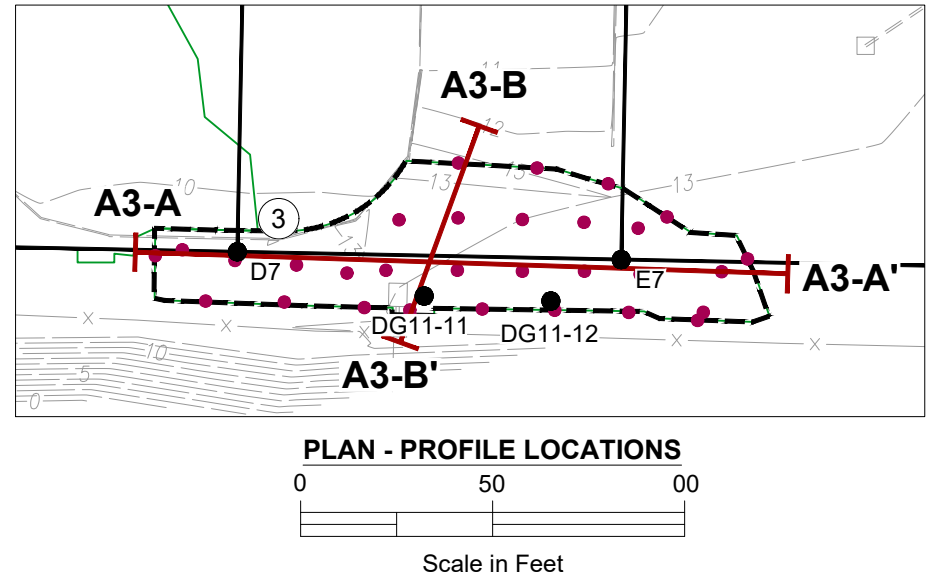
TPH-G = Total Petroleum Hydrocarbons as Gasoline Range

PCBs = Polychlorinated Biphenyls

J = Estimated concentration, detected greater than the method detection limit (MDL) and less than the Reporting Limit. Flag applied by the laboratory.

JH* = Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

N* = Laboratory noted that Gasoline Range Organics (C6 - C12) chromatographic patterns indicated that detections were due to the presence of unresolved, non-target compounds in the gasoline range. Results are not consistent with a known petroleum distillate. Flag applied by Shannon & Wilson, Inc. (*)



NOTE

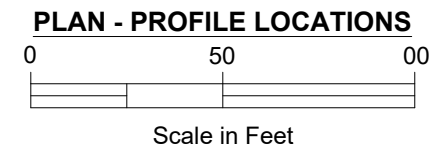
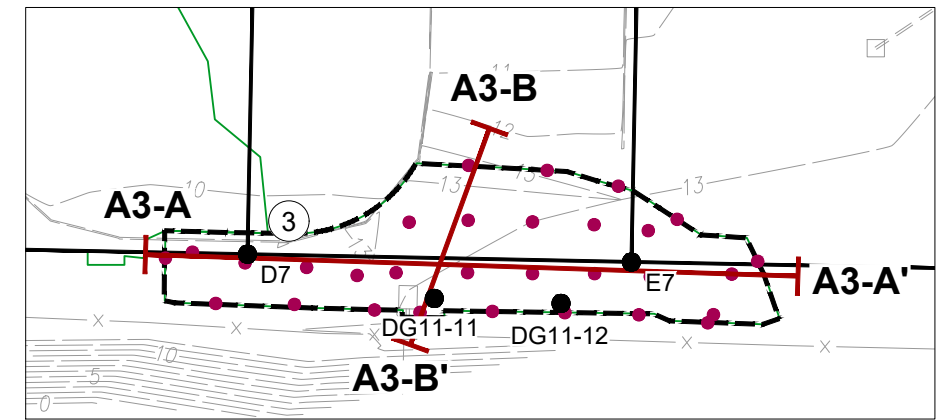
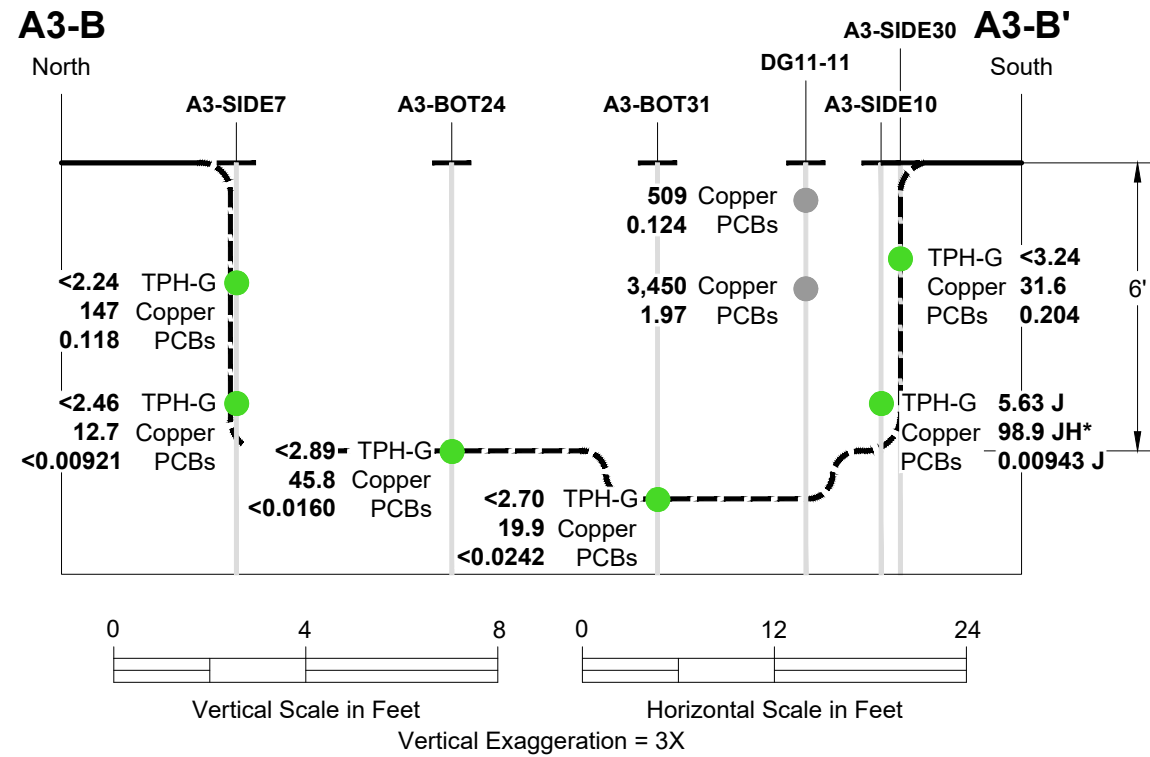
1. Cobbles, boulders, and concrete blocks were observed at 3' and deeper from the west extent of Area 3 to the location of sample A3-SIDE32. The material type and location suggest this material is part of the shoreline berm. Based on permit drawings (not as-builts), the berm was designed to be approximately 30 feet wide at its base, 12 feet wide at its top, and 15 feet high.

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AREA 3 CROSS SECTIONS A3-A

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SHANNON & WILSON, INC. FIG. 11



PLAN LEGEND

- E7 ● Historical Soil Sample
- Confirmation Soil Sample
- Excavation
- A3-A** |— Excavation Profile Location

PROFILE LEGEND

- E6** ← Sample Location Designation
- Excavation Limits
- Data Result in mg/kg
- Data Result in mg/kg (Excavated)
- mg/kg ← Milligrams per Kilogram
- ← Indicates Not Detected at or Above Value Shown

APPLICABLE SCREENING CRITERIA

ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)	VALUE (mg/kg)
TPH-G	CUL	250
Copper	RL	250
PCBs	RL	0.5

ABBREVIATIONS

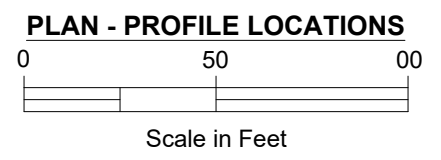
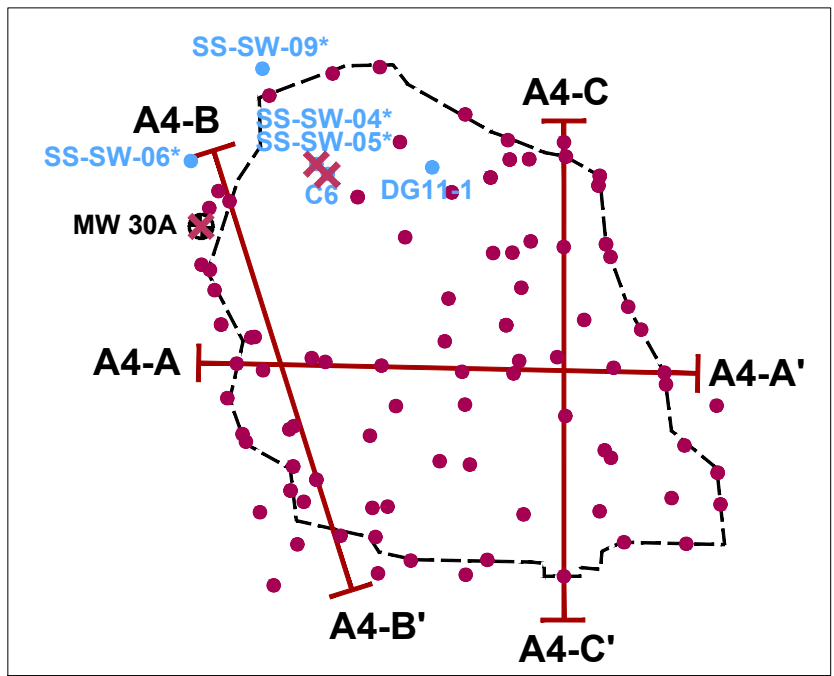
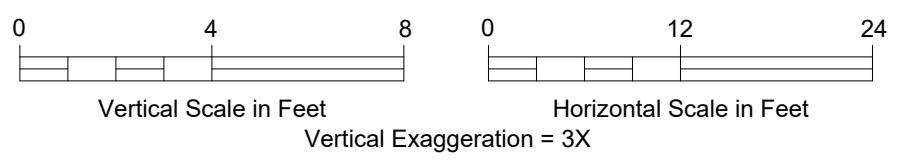
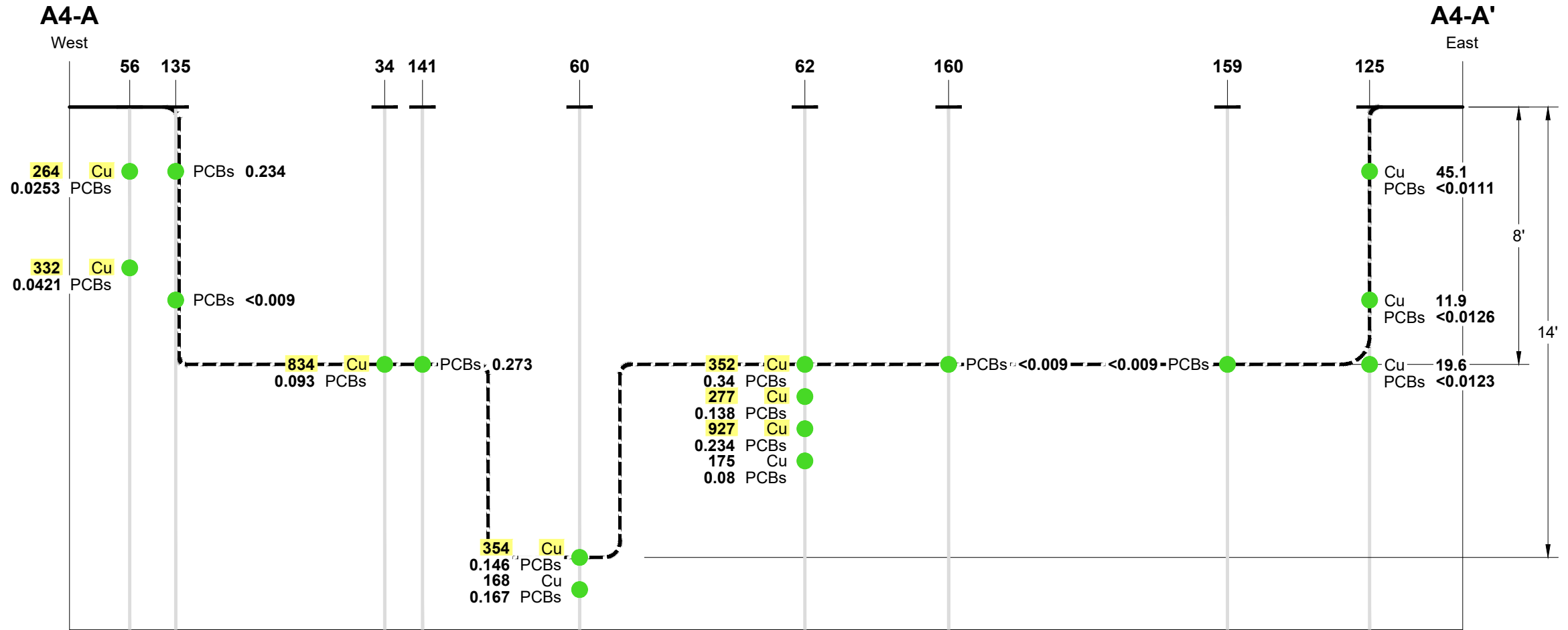
- TPH-G = Total Petroleum Hydrocarbons as Gasoline Range
- PCBs = Polychlorinated Biphenyls
- J = Estimated concentration, detected greater than the method detection limit (MDL) and less than the Reporting Limit. Flag applied by the laboratory.
- JH* = Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

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AREA 3 CROSS SECTION A3-B

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ABBREVIATIONS
 Cu = Copper
 mg/kg = Milligrams per Kilograms
 PCBs = Polychlorinated Biphenyls
 < = Not Detected Above Laboratory Reporting Limit

PROFILE LEGEND
 E6 ← Sample Location Designation
 --- Excavation
 ● Data Result in mg/kg
 Cu 354 Yellow Highlight Indicates Exceedance of Project Level Cleanup

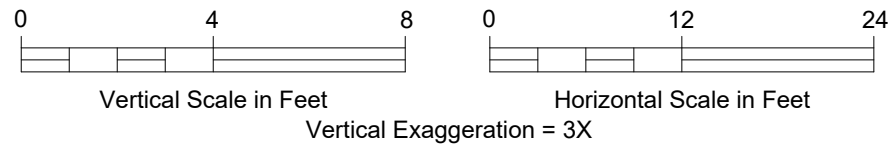
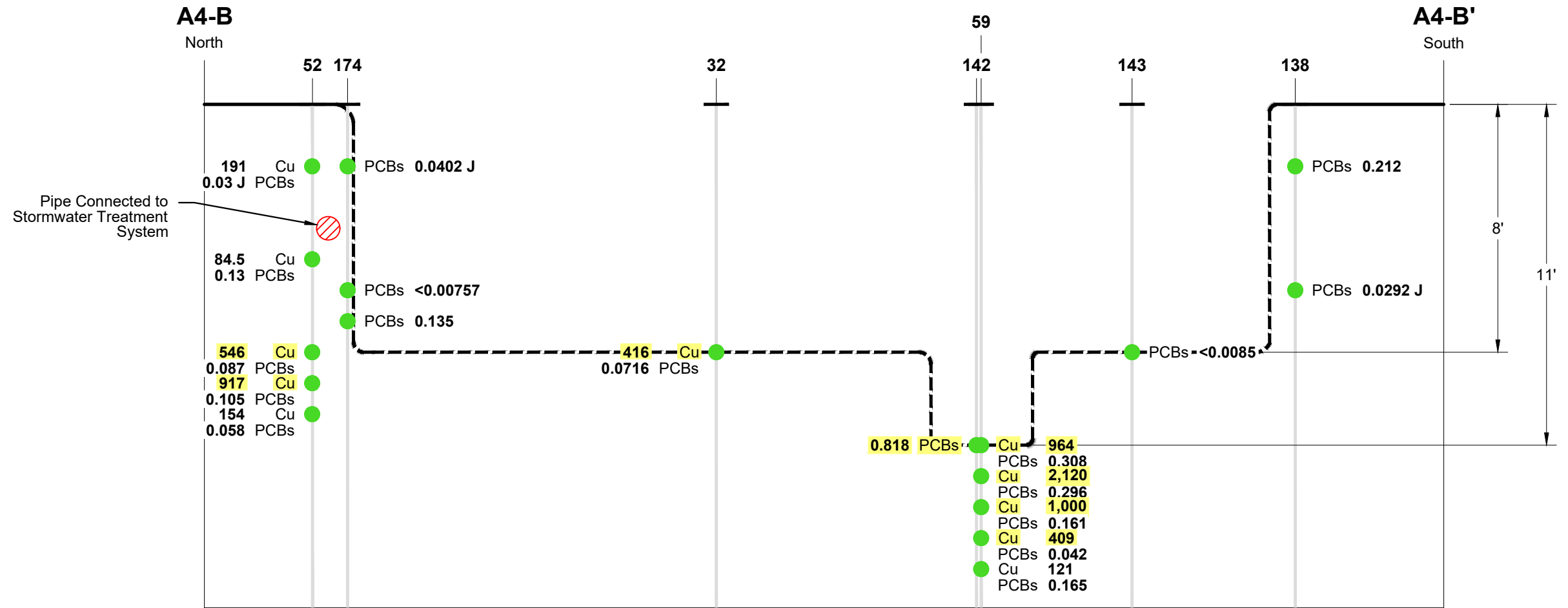
APPLICABLE SCREENING CRITERIA		
ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)	VALUE (mg/kg)
Copper	RL	250
PCBs	RL	0.5

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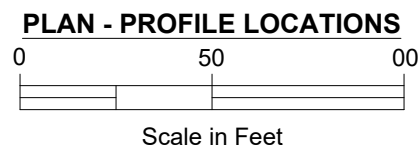
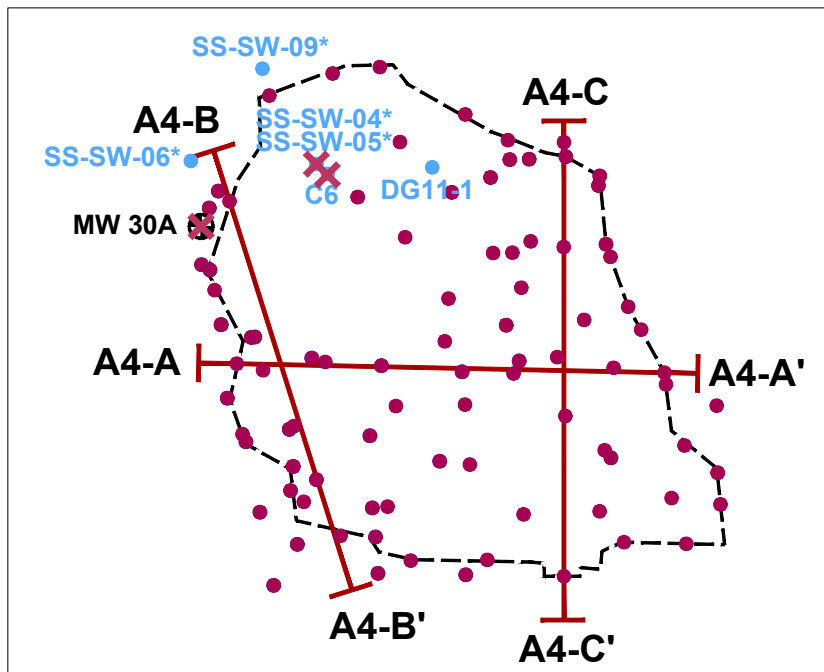
AREA 4 CROSS SECTION A4-A

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SHANNON & WILSON, INC. FIG. 13



APPLICABLE SCREENING CRITERIA		
ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)	VALUE (mg/kg)
Copper	RL	250
PCBs	RL	0.5



ABBREVIATIONS

- Cu = Copper
- mg/kg = Milligrams per Kilograms
- PCBs = Polychlorinated Biphenyls
- < = Not Detected Above Laboratory Reporting Limit
- J = Estimated concentration, detected greater than the method detection limit (MDL) and less than the Reporting Limit. Flag applied by the laboratory.

PROFILE LEGEND

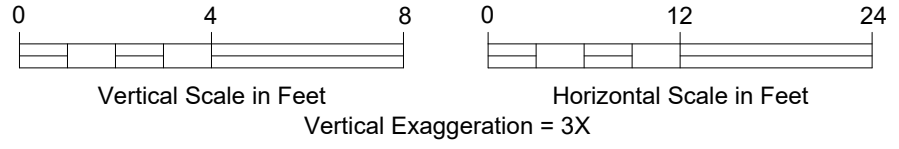
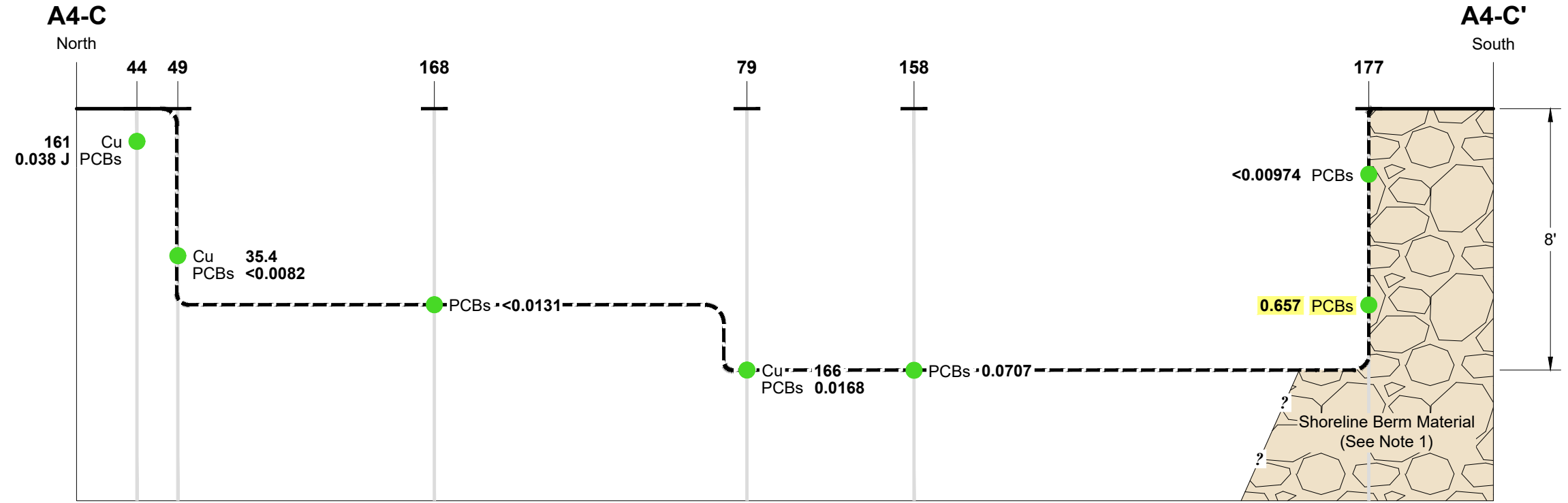
- E6 ← Sample Location Designation
- Excavation
- Data Result in mg/kg
- Cu 354 Yellow Highlight Indicates Exceedance of Project Level Cleanup

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AREA 4 CROSS SECTION A4-B

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Filename: C:\Users\jrs\CAD Group\Dropbox\UDrive\SEA\108056\004\108056-004 Expansion Profiles.dwg Layout: Figure 15 Date: 10-16-2023 Login: JRS

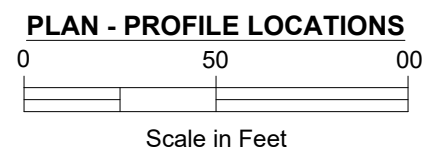
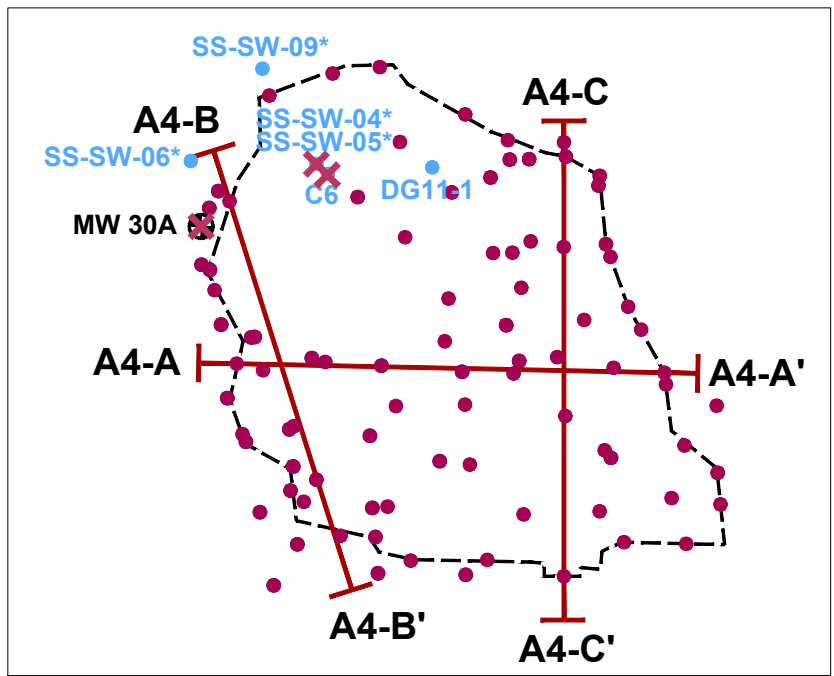


NOTE

1. Shoreline berm material was observed in the excavation sidewalls and consisted of cobbles, boulders, and concrete blocks. The extent of the berm is based on permit drawings (not as built drawings). The berm was designed to be approximately 30 feet wide at its base, 12 feet wide at its top, and 15 feet high.

APPLICABLE SCREENING CRITERIA

ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)	VALUE (mg/kg)
Copper	RL	250
PCBs	RL	0.5



ABBREVIATIONS

- Cu = Copper
- mg/kg = Milligrams per Kilograms
- PCBs = Polychlorinated Biphenyls
- < = Not Detected Above Laboratory Reporting Limit
- J = Estimated concentration, detected greater than the method detection limit (MDL) and less than the Reporting Limit. Flag applied by the laboratory.

PROFILE LEGEND

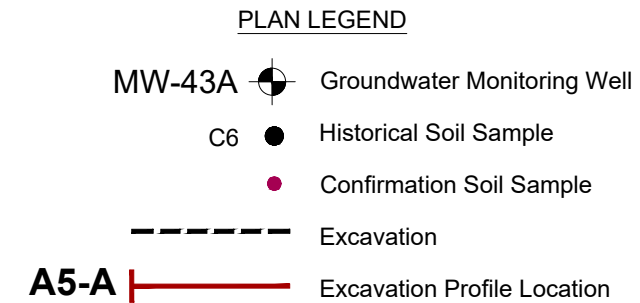
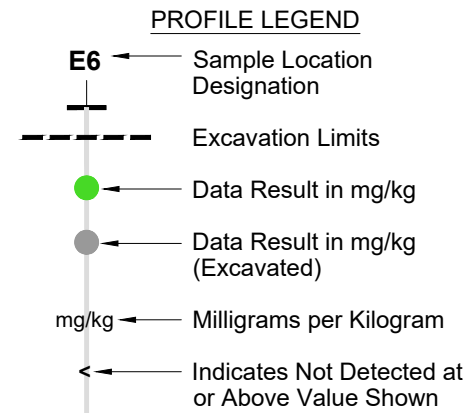
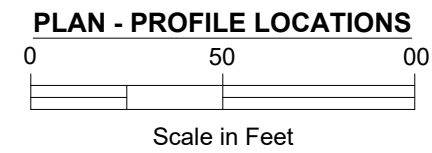
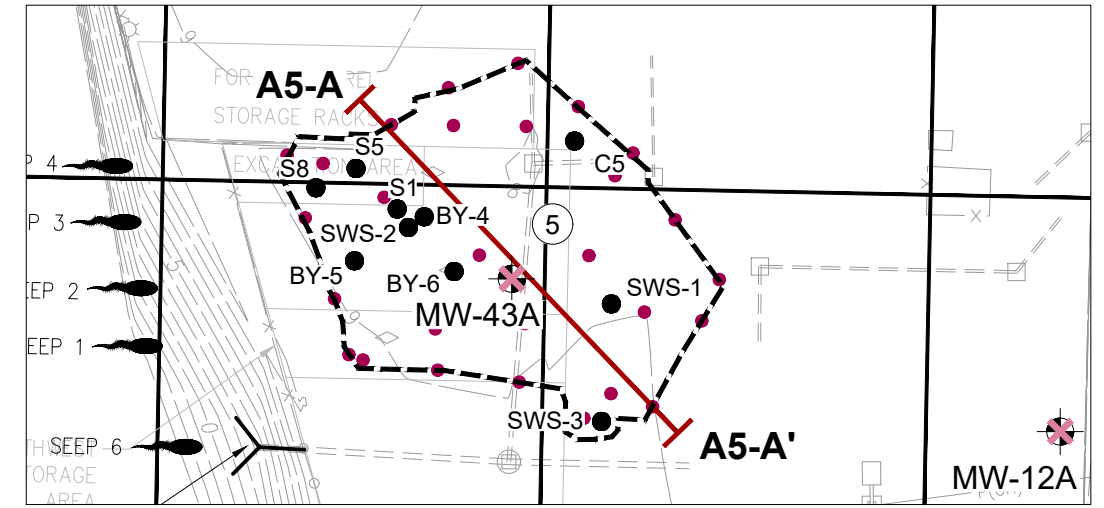
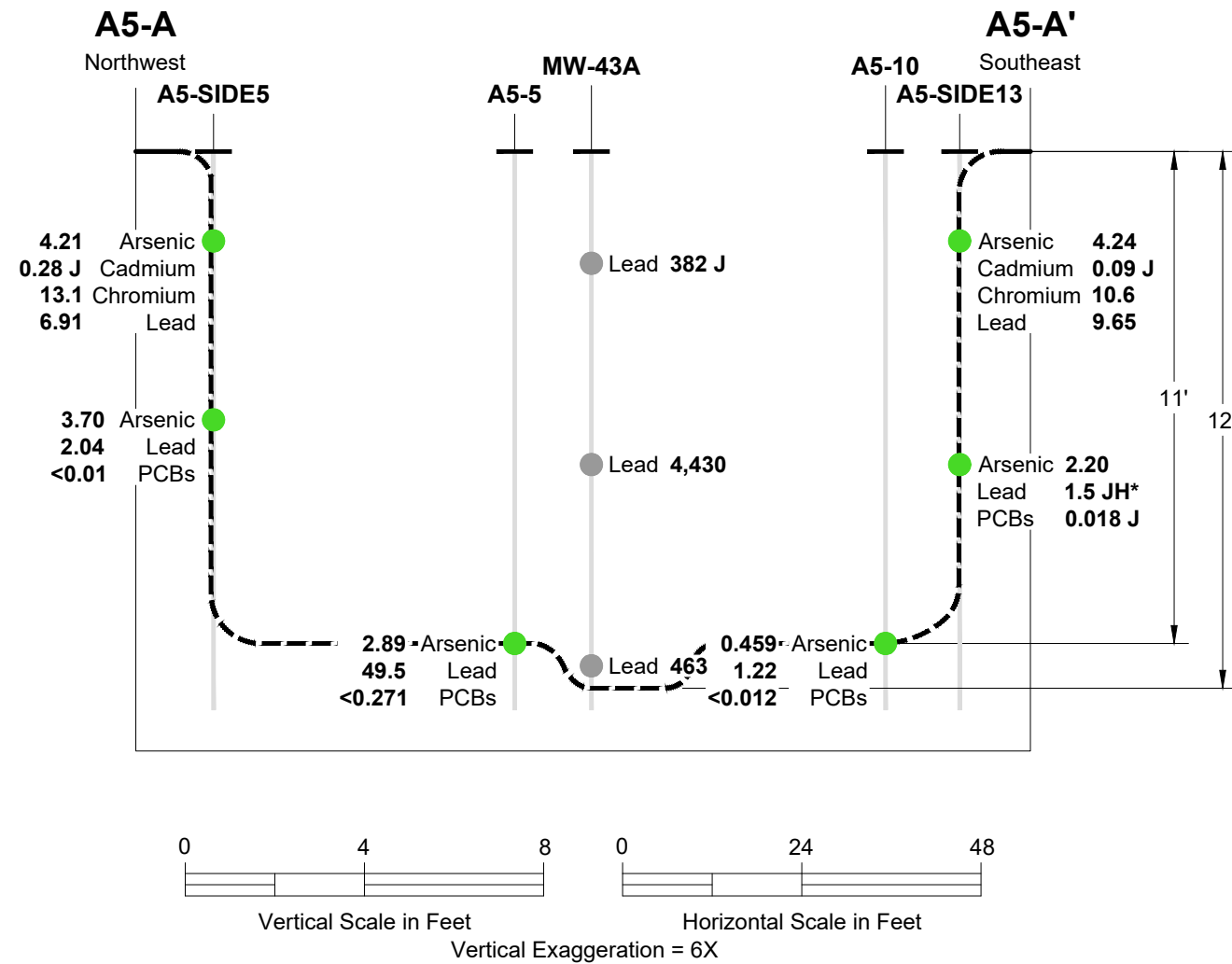
- E6 ← Sample Location Designation
- Excavation
- Data Result in mg/kg
- Cu 354 Yellow Highlight Indicates Exceedance of Project Level Cleanup

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AREA 4 CROSS SECTION A4-C

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APPLICABLE SCREENING CRITERIA

ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)	VALUE (mg/kg)
Arsenic	RL	14.6
Cadmium	CUL	5.1
Chromium	CUL	2,600
Lead	CUL	250
PCBs	RL	0.5

ABBREVIATIONS

J = Estimated concentration, detected greater than the method detection limit (MDL) and less than the Reporting Limit. Flag applied by the laboratory.

JH* = Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

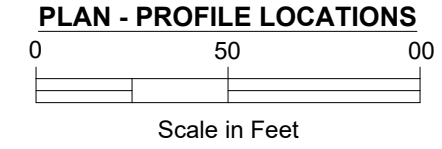
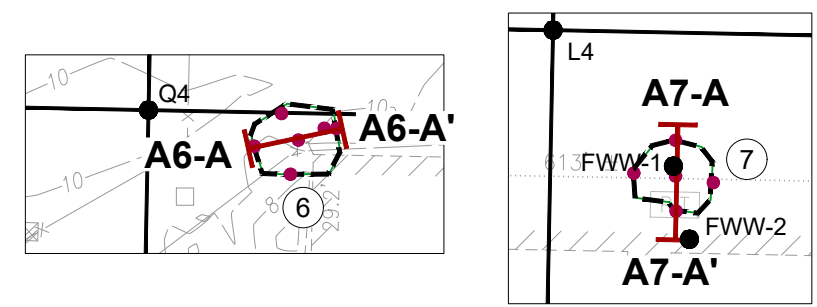
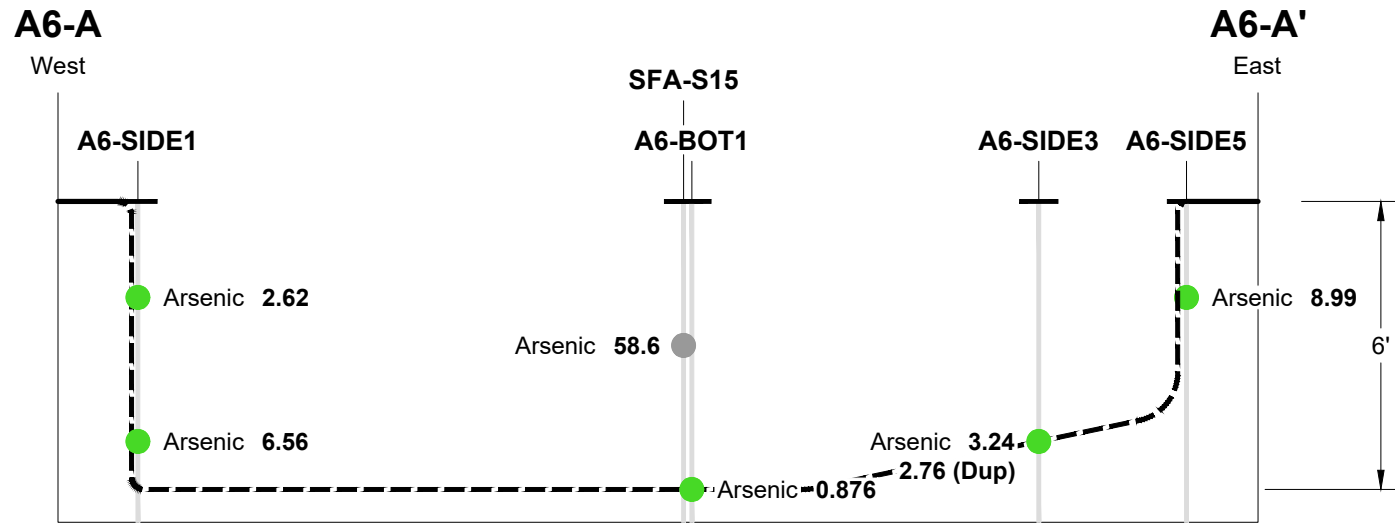
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AREA 5 CROSS SECTION

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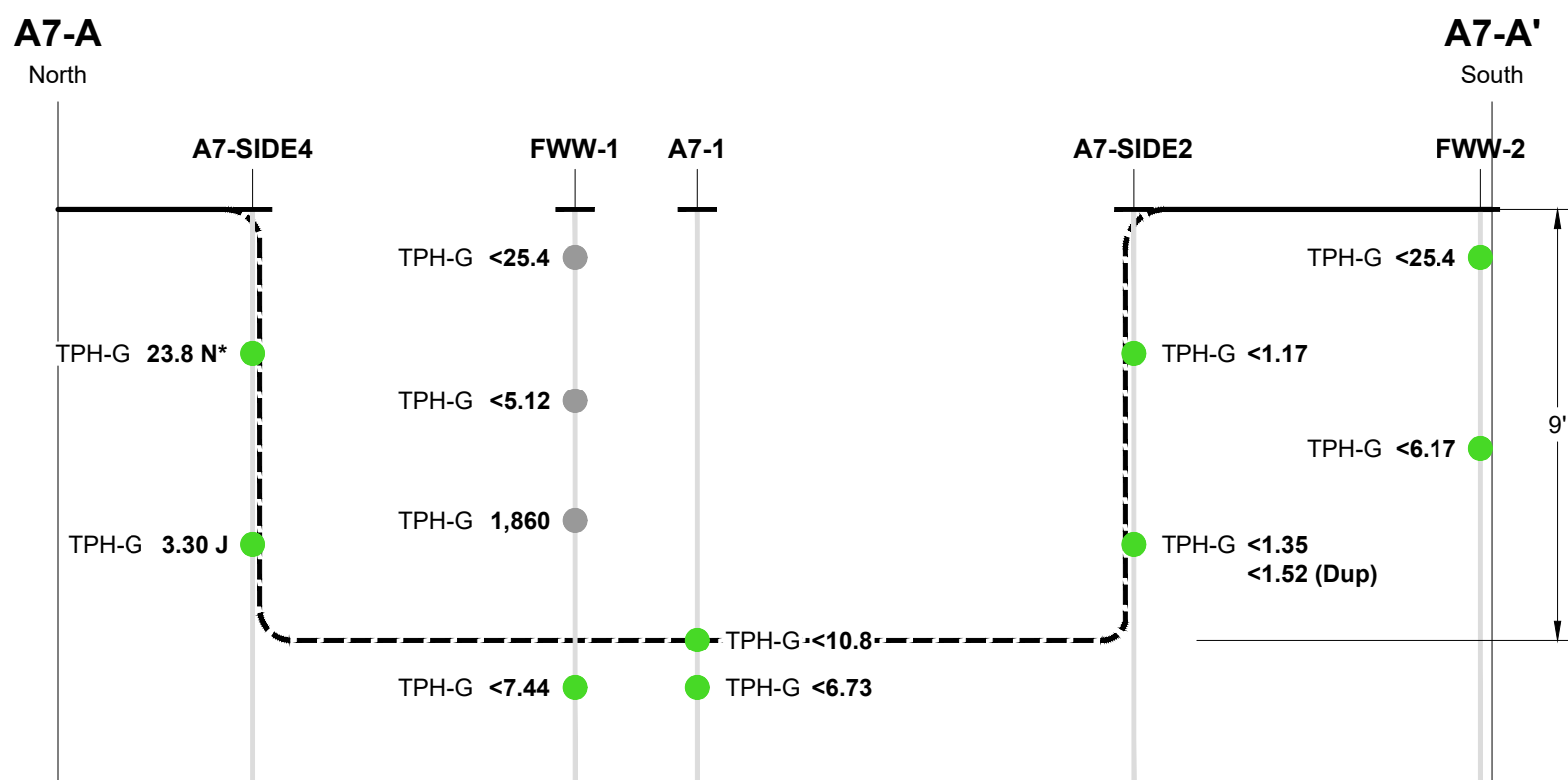
SHANNON & WILSON, INC. FIG. 16

Filename: C:\Users\jrs\CAD Group\Dropbox\Jdrive_SEA\108056\004\108056-004 Excavation Profiles.dwg Layout: Figure 17 Date: 10-16-2023 Login: JRS



PLAN LEGEND

- H4 ● Historical Soil Sample
- Confirmation Soil Sample
- Excavation
- A6-A** |--- Excavation Profile Location



- PROFILE LEGEND**
- E6 ← Sample Location Designation
 - Excavation Limits
 - Data Result in mg/kg
 - Data Result in mg/kg (Excavated)
 - mg/kg ← Milligrams per Kilogram
 - ← Indicates Not Detected at or Above Value Shown

APPLICABLE SCREENING CRITERIA

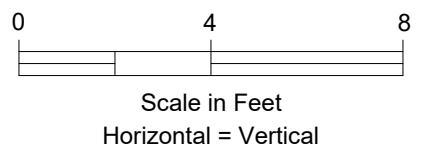
ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)		VALUE (mg/kg)
	Arsenic	RL	
TPH-G	CUL	250	

ABBREVIATIONS

TPH-G = Gasoline-Range Hydrocarbons

N* = Results are not consistent with a known petroleum distillate. Flag applied by Shannon & Wilson, Inc. (*)

J = Estimated concentration, detected greater than the method detection limit (MDL) and less than the Reporting Limit. Flag applied by the laboratory.

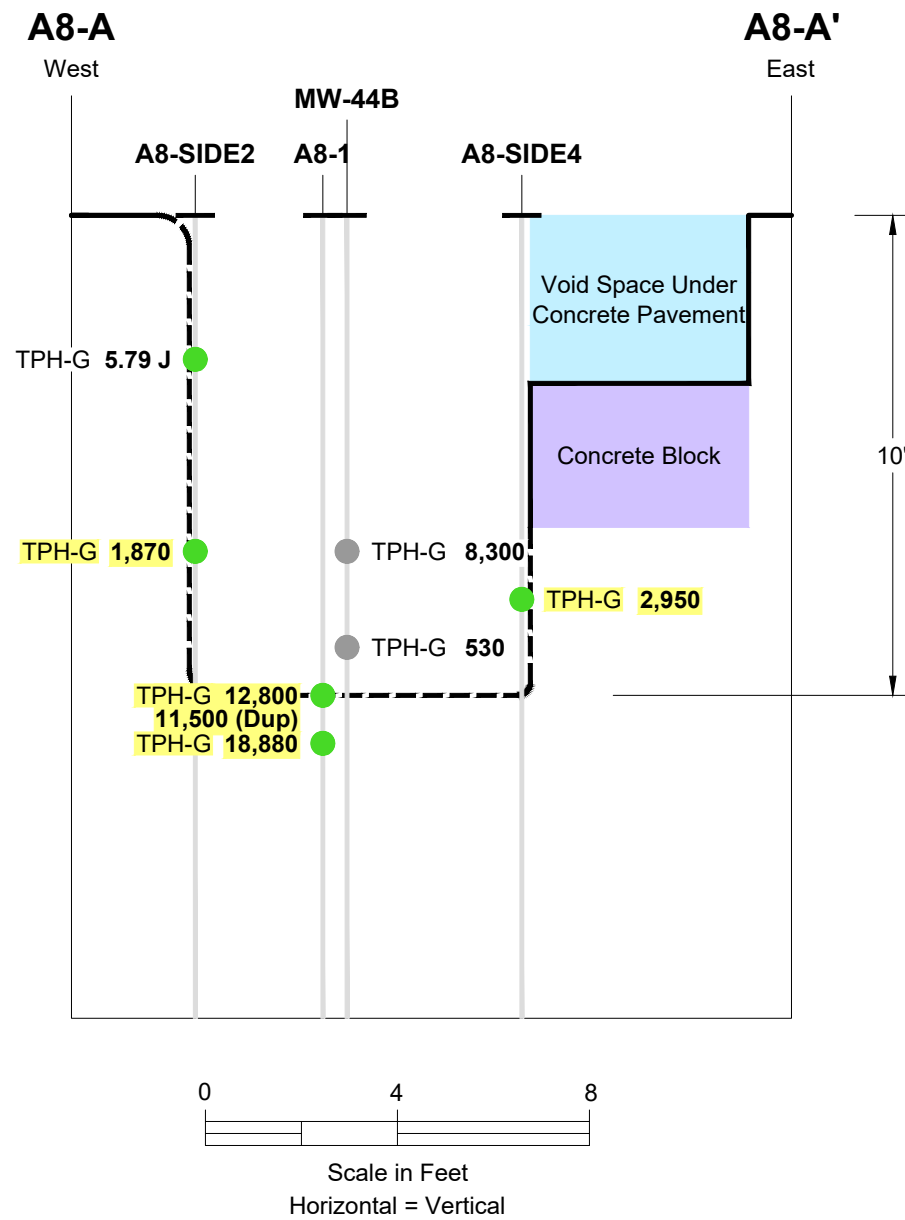


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AREAS 6 AND 7 CROSS SECTIONS

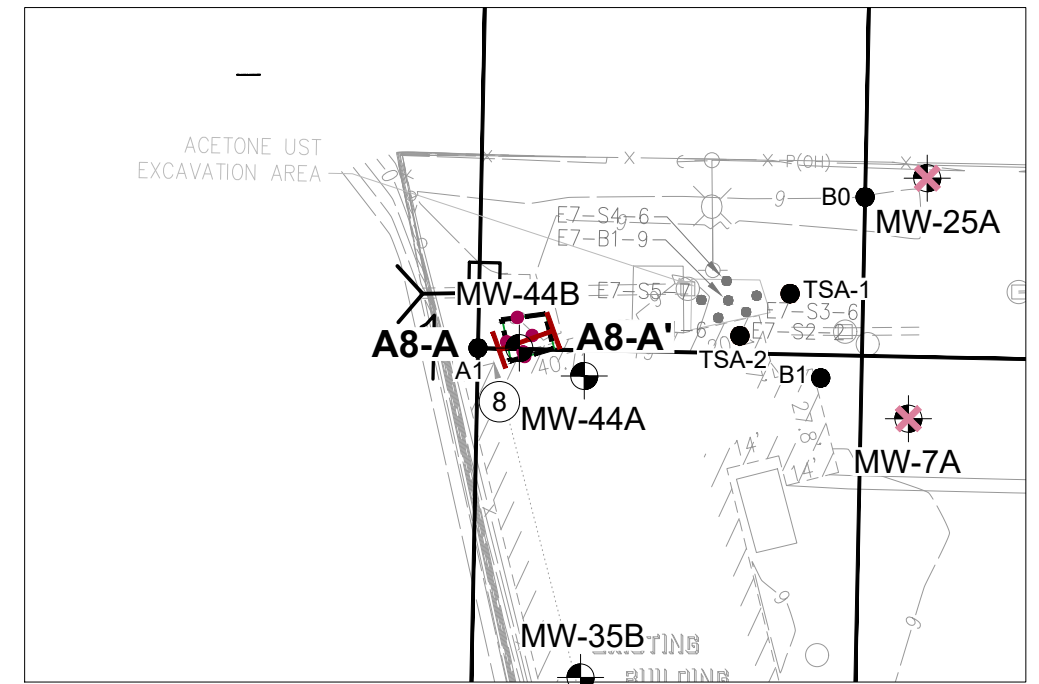
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SHANNON & WILSON, INC. FIG. 17



ABBREVIATION

J = Estimated concentration, detected greater than the method detection limit (MDL) and less than the Reporting Limit. Flag applied by the laboratory.
 TPH-G = Total Petroleum Hydrocarbons as Gasoline Range



PLAN - PROFILE LOCATIONS
 Scale in Feet

PLAN LEGEND

- B1 ● Historical Soil Sample
- Confirmation Soil Sample
- ✕ Decommissioned
- Excavation
- A8-A** |— Excavation Profile Location

PROFILE LEGEND

- E6 ← Sample Location Designation
- Excavation Limits
- Data Result in mg/kg
- Data Result in mg/kg (Excavated)
- mg/kg ← Milligrams per Kilogram
- ← Indicates Not Detected at or Above Value Shown
- TPH-G 2,950** Yellow Highlight Indicates Exceedance of Project Level Cleanup

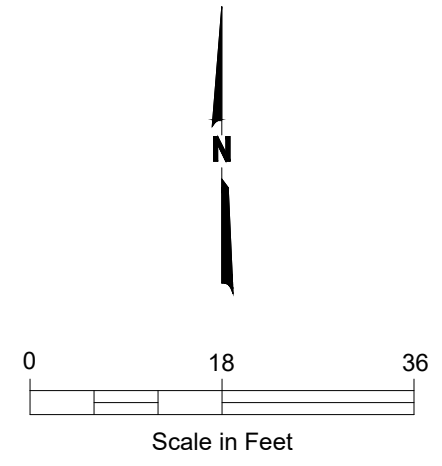
APPLICABLE SCREENING CRITERIA

ANALYTE	PROJECT CLEANUP LEVEL (CUL) or REMEDIATION LEVEL (RL)	VALUE (mg/kg)
TPH-G	CUL	250

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AREA 8 CROSS SECTION

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LEGEND

50 ● Boring Locations

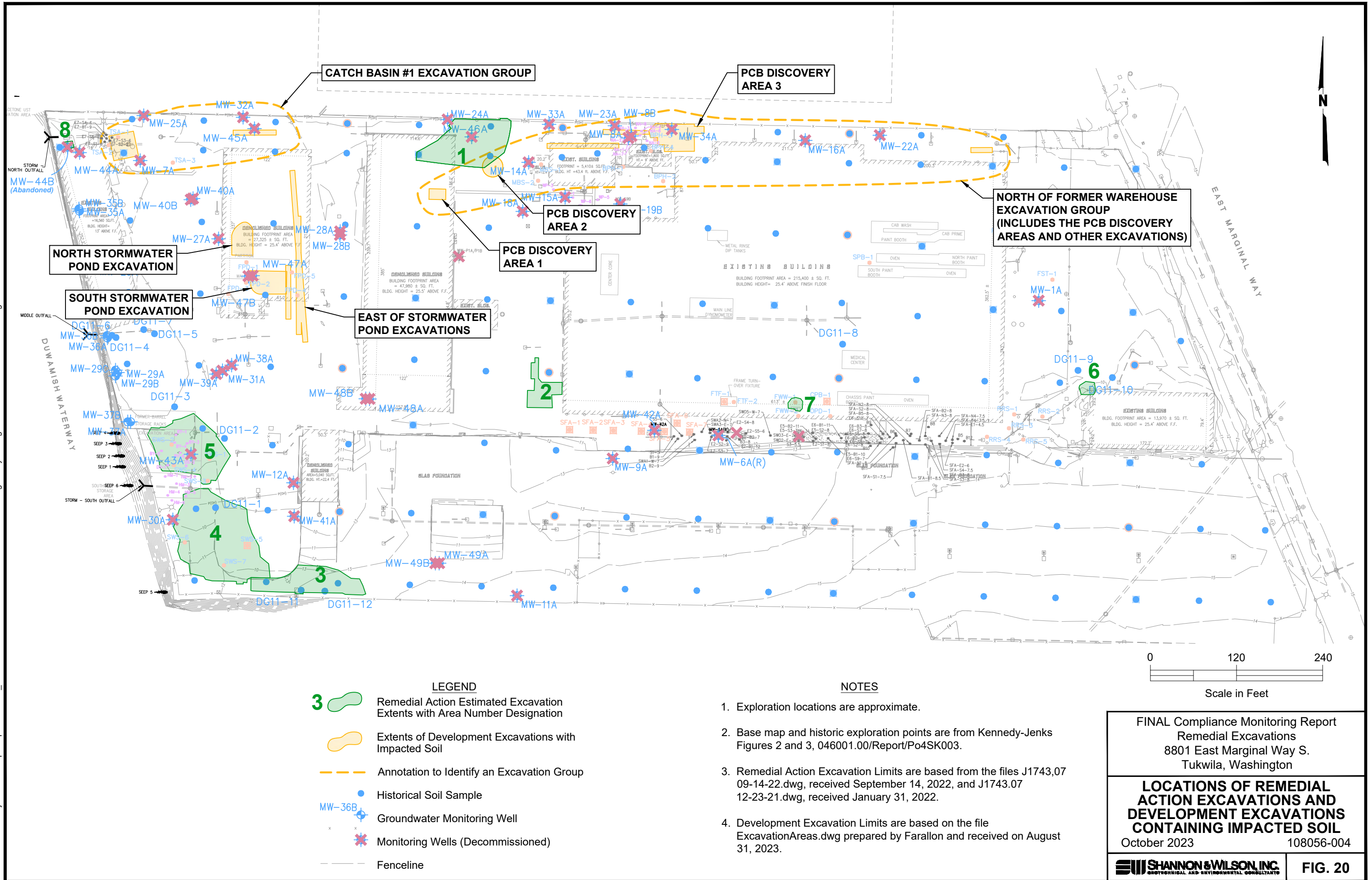
— Extent of Excavation

- NOTES**
1. Sample designations with numbers (##) only are abbreviated. Sample designations are A4-SIDE## or A4-BOT##.
 2. Locations are approximate.

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AREA 4 BORING LOCATIONS

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LEGEND

- 3 Remedial Action Estimated Excavation Extents with Area Number Designation
- Extents of Development Excavations with Impacted Soil
- Annotation to Identify an Excavation Group
- Historical Soil Sample
- MW-36B Groundwater Monitoring Well
- Monitoring Wells (Decommissioned)
- Fenceline

NOTES

1. Exploration locations are approximate.
2. Base map and historic exploration points are from Kennedy-Jenks Figures 2 and 3, 046001.00/Report/Po4SK003.
3. Remedial Action Excavation Limits are based from the files J1743,07 09-14-22.dwg, received September 14, 2022, and J1743,07 12-23-21.dwg, received January 31, 2022.
4. Development Excavation Limits are based on the file ExcavationAreas.dwg prepared by Farallon and received on August 31, 2023.

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LOCATIONS OF REMEDIAL ACTION EXCAVATIONS AND DEVELOPMENT EXCAVATIONS CONTAINING IMPACTED SOIL
October 2023 108056-004

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 20

Appendix A

Representative Photos

Exhibits

Exhibit A-1: Area 1 – Final Extent of Northeast Corner. A-1

Exhibit A-2: Area 1 – Final Extent of Southeast Corner..... A-1

Exhibit A-3: Area 1 – Final Extent of Southwest Corner. A-2

Exhibit A-4: Area 2 – Excavation and Hauling. A-2

Exhibit A-5: Area 2 – View of the Southwest Portion of the Excavation. A-3

Exhibit A-6: Area 2 – View of the Northeast Portion of the Excavation. A-3

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Exhibit A-1: Area 1 – Final Extent of Northeast Corner. Photo taken on September 21, 2021. View direction is east.



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Exhibit A-4: Area 2 – Excavation and Hauling. Photo taken on September 20, 2021. View direction is north.

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Exhibit A-5: Area 2 – View of the Southwest Portion of the Excavation. Photo taken on September 20, 2021. View direction is North. The shown excavation extents were later expanded.



Exhibit A-6: Area 2 – View of the Northeast Portion of the Excavation. Photo taken on September 20, 2021. View direction is northeast.

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Exhibit A-7: Area 2 – View of the North Portion Final Extent of the Excavation. Photo taken on November 3, 2021. View direction is northwest. Imported Gravel Borrow is shown in the center and right foreground.



Exhibit A-8: Area 2 – View of the Southwest Portion Final Extent of the Excavation. Pink flags are sample locations. Photo taken on November 3, 2021. View direction is south. Water in the excavation is pooled rainwater and was removed prior to backfilling.

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Exhibit A-9: Area 3 – View of the West Portion of the Excavation. Photo taken on September 28, 2021. View direction is northwest. The excavation was later expanded. Large rocks and concrete are visible in the sidewalls shown at the center of the photo and into the background. The large rocks and concrete are part of the shoreline berm.



Exhibit A-10: Area 3 – View of the West Portion of the Excavation. Photo taken on September 29, 2021. View direction is west. The excavation was later expanded.

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Exhibit A-11: Area 3 – View of the Central Portion of the Excavation. Photo taken on October 18, 2021. View direction is east. The southeast corner sidewall was expanded.



Exhibit A-12: Area 3 – View of the North Portion Final Extent of the Excavation. Photo taken on November 3, 2021. View direction is east. Water in the excavation is pooled rainwater that was removed prior to backfilling. Large rocks are part of the shoreline berm. Placement of backfill is occurring in the background.

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Exhibit A-13: Excavation Activities at Northwest Sidewall of Area 4. Photo taken on August 26, 2022. View direction is north.

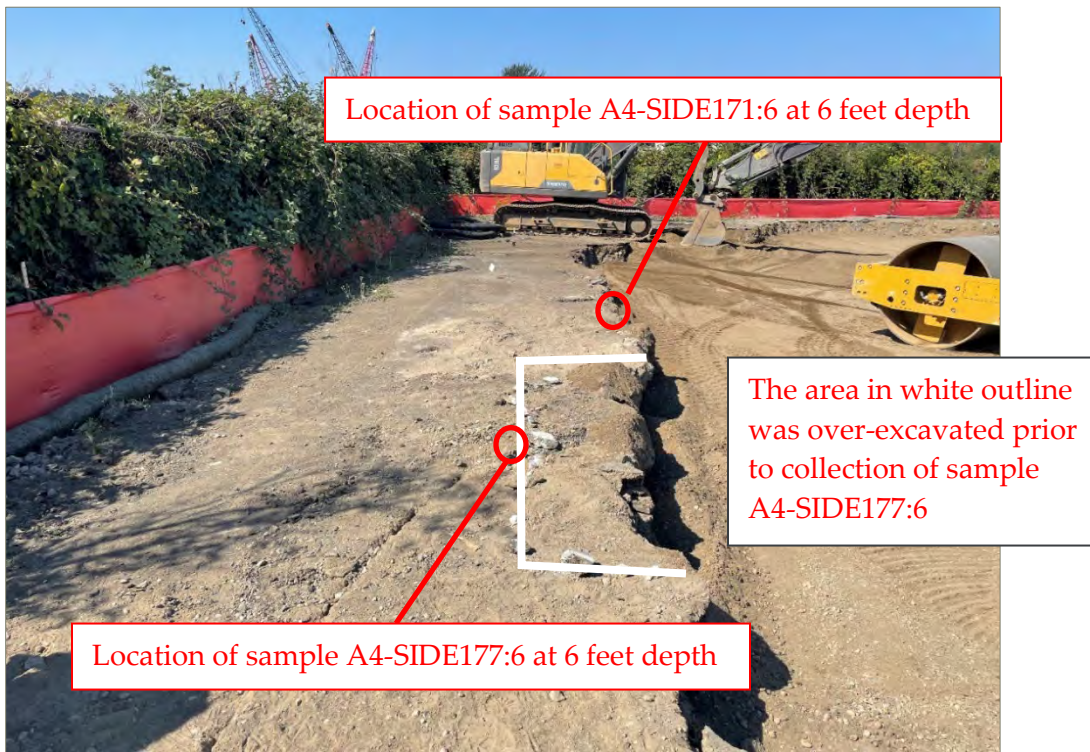


Exhibit A-14: View of Proximity to Shoreline Berm Downslope at South Sidewall of Area 4. Photo taken on August 31, 2022. View direction is west.

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Exhibit A-15: Excavation Activities at Area 4 Sample A4-SIDE177:6. Photo taken on August 31, 2022. View direction is south.



Exhibit A-16: View of West Sidewall Area 4 near Sample A4-SIDE174. Photo taken on August 26, 2022. View direction is north.

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Exhibit A-17: Area 5 – View of the Southwest Portion of the Excavation. Photo taken on September 29, 2021. View direction is south. Water in the excavation is groundwater and was later removed and treated when the excavation was expanded.



Exhibit A-18: Area 5 – View of the North Portion of the Excavation. Photo taken on October 1, 2021. View direction is northwest. Water in the excavation is groundwater and was later removed and treated. Rocks were part of support for the sheet pile wall that is in the north west corner of the excavation.

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Exhibit A-19: Area 5 – View of the Northwest Corner Final Extent of the Excavation. Photo taken on November 4, 2021. View direction is north. The visible large rocks are concrete blocks that are part of the shoreline berm and were left in place. A portion of sheet pile wall is shown extending into the excavation. A plastic pipe for the sump is shown in the top right corner of the photo and was later removed. Imported Gravel Borrow is shown on the right side of the photo.



Exhibit A-20: Area 6 – View of Area 6 During Excavation on October 14, 2021. View direction is north.

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Exhibit A-21: Area 7 – View of the Pavement Removal Over the Excavation. Photo taken on October 4, 2021. View direction is east. A concrete vault filled with pea gravel is shown in the south (right) half of the excavation.



Exhibit A-22: Area 7 – View of the Concrete Vault (Upside Down) that was Removed from the Excavation. Photo taken on October 6, 2021.

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Exhibit A-23: Area 7 – View of the West Sidewall Final Extent. Photo taken on October 6, 2021. View direction is west. Groundwater was observed in the excavation bottom.



Exhibit A-24: Area 7 – View of the South Sidewall Final Extent. Photo taken on October 6, 2021. View direction is south. Groundwater was observed in the excavation bottom.

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Exhibit A-25: Area 7 – View of the North Sidewall Final Extent. Photo taken on October 6, 2021. View direction is north. Groundwater was observed in the excavation bottom.



Exhibit A-26: Area 8 – View of the Void in the East Half of the Excavation. Photo taken on October 4, 2021. View direction is northwest. The pink outline shows the extent of that was excavated later.

APPENDIX A: REPRESENTATIVE PHOTOS

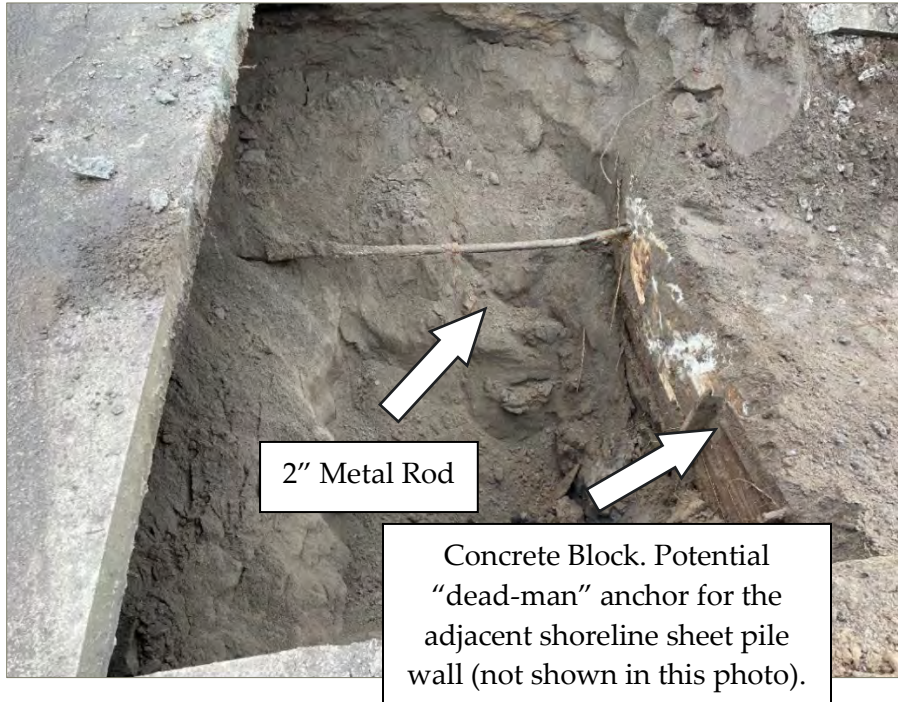


Exhibit A-27: Area 8 – View of the West Half Final Extent of the Excavation. Photo taken on October 5, 2021. View direction is north. A metal rod and concrete block were observed in the excavation and are potential structural components of the adjacent sheet pile wall.

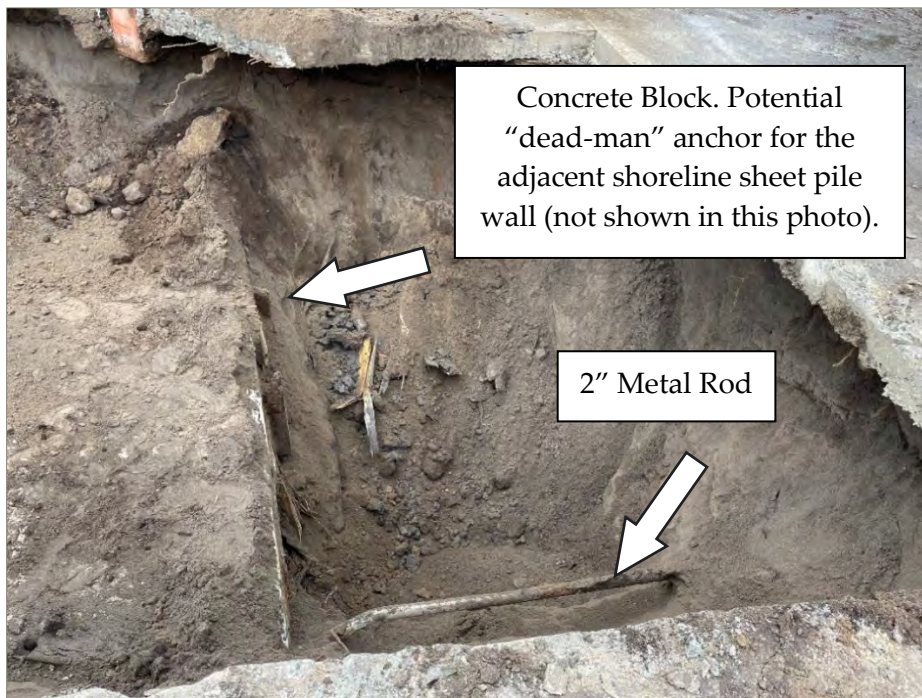


Exhibit A-28: Area 8 – View of the West Half Final Extent of the Excavation. Photo taken on October 5, 2021. View direction is south. A metal rod and concrete block were observed in the excavation and are potential structural components of the adjacent sheet pile wall.

APPENDIX A: REPRESENTATIVE PHOTOS

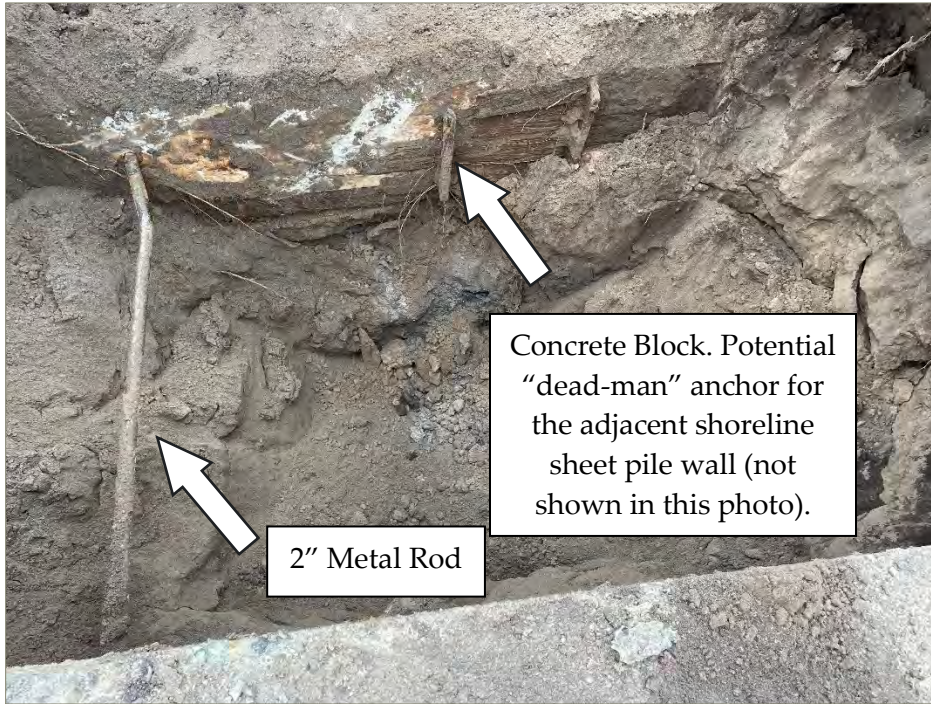


Exhibit A-29: Area 8 – View of the West Half Final Extent of the Excavation. Photo taken on October 5, 2021. View direction is east. A metal rod and concrete block were observed in the excavation and are potential structural components of the adjacent sheet pile wall.

Appendix B

Field Methods

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APPENDIX B: FIELD METHODS

B.1 INTRODUCTION

The purpose of this appendix is to discuss field methods undertaken during the remedial excavations and ancillary activities that occurred during September 2021 through August 2022 at the 8801 property. Site redevelopment activities (conducted by the property owner, CenterPoint 8801 Marginal LLC) occurred separate, and at times concurrent, with remedial excavations and are discussed as they relate to remediation efforts.

The following sections are organized by preparation activities, excavation and disposal activities, and field quality assurance/quality control.

B.2 REMEDIAL ACTION PREPARATION ACTIVITIES

Actions undertaken prior to remediation excavations are detailed below.

B.2.1 Utility Locating and Disconnection

CenterPoint, the property owner, reportedly disconnected public utilities in August 2021 in preparation for redevelopment activities, including electricity, sanitary sewer, water, and natural gas.

Although utilities were apparently disconnected, Shannon & Wilson notified the Washington Underground Utilities Location Center (1-800-424-5555) at least 48 hours before the start of subsurface work at the 8801 property. Additionally, Shannon & Wilson contracted a private utility locator (APS Locates) to identify potential utilities in the excavation areas using conductible methods and ground-penetrating radar.

Utilities that were identified in the excavation areas were verified to be disconnected and inactive prior to subsurface work, except as discussed in the next section.

B.2.2 Stormwater Pipe Plugging

Two stormwater treatment systems exist on the 8801 property. The north treatment system is located at the northwest corner of the 8801 property and the south treatment system is located at the center of the west boundary of the 8801 property. The stormwater treatment systems were inactivated by CenterPoint prior to the start of redevelopment work and remedial excavations.

Stormwater pipes were identified in Areas 4 and 5 that directed water to the south treatment system. To protect the inactive south treatment system, temporary inflatable

plugs were installed in the stormwater pipes downstream from the excavation limits for Areas 4 and 5. During excavation activities, the stormwater pipes within Areas 4 and 5 were removed upstream of the plugs with other excavated materials. At the completion of the excavation work, the temporary inflatable plugs were removed and the open ends of stormwater pipes were permanently plugged with concrete.

New stormwater pipes were installed during redevelopment. Because the new stormwater pipes were installed in different locations and elevations than the historical pipes, the plugged stub pipes from the historical stormwater system were not used.

B.2.3 Well Decommissioning

Groundwater monitoring wells were decommissioned during several events:

- During May and June 2021, in accordance with the Compliance Monitoring Plan (CMP), a Washington State licensed driller decommissioned 39 on-site groundwater monitoring wells and one former recovery well. The wells were decommissioned in preparation for the site redevelopment and remedial excavations. Recovery wells RW1 and RW2 were not located and are assumed to have been previously decommissioned.
- A Washington State licensed driller decommissioned MW-30A in August 2022 in preparation for expansion to the Area 4 excavation.
- During January 2023, MW-44A was damaged during CenterPoint's redevelopment activities on the property. A Washington State licensed driller decommissioned MW-44A in March 2023.

The IDs for decommissioned wells and remaining site wells are listed in Table 1 of the main report.

The wells were decommissioned by filling the well casings with bentonite chips or concrete grout from total depth to 2 feet depth and then concrete grout to the surface. Resource Protection Well Reports for the decommissioned wells are provided as Appendix C. The locations of decommissioned wells are provided in Figure 2 of the main report.

Replacement monitoring wells were installed in accordance with the CMP in spring 2023 after the locations were paved or the landscaped berm was installed. Methods and installation logs will be provided in a separate report.

B.2.4 Building and Pavement Demolition

As part of CenterPoint's redevelopment project, CenterPoint demolished structures that were installed over Areas 6, 7, and 8. Additionally, the asphalt and concrete pavement covering the initial extent of Areas 1 through 8 was removed by CenterPoint. The

demolition and material handling procedures were implemented as part of CenterPoint's redevelopment project.

B.2.5 Waste Profiling of Contaminated Soil

Excavated soil from the remedial excavations was accepted under Waste Management's profile 135321OR as non-hazardous waste. The approved waste profile is provided in Appendix J. The soil was profiled prior to the start of excavation work as described below.

In July and September 2019, soil samples were collected from Area 1 for trichloroethylene (TCE) analysis. Soil samples were collected in the location of former boring G0 where elevated TCE had been previously detected. Soil samples at boring B1 were collected at 4 and 8 feet below ground surface (bgs). Soil samples at boring B6 were collected at 6 to 9 feet and 11 to 14 feet bgs. Soil samples were submitted to Analytical Resources, Incorporated in Tukwila, Washington for analysis of halogenated volatile organic compounds (VOCs). The results were below the TCE remediation level of 5 milligrams per kilogram. A sample was later analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) per U.S. Environmental Protection Agency (EPA) Method 1311. The TCE value was non detect at the laboratory detection value. The samples were named B-1:4, B-1:8, B-6:6-9, and B-6:11-14. The lab reports are provided in Appendix J.

In 2021, representative soil from the excavation areas was collected via drilling and analyzed for waste characterization purposes prior to the start of excavation work. Several borings were advanced within Areas 4, 5, 7, and 8 during February 25 and March 1, 2021. Soil cuttings from the borings were composited based on the excavation area, except for Areas 7 and 8, which were composited together. The composite samples were named A4-WA, A5-WA, and A7A8-WA.

The composite samples were submitted to Fremont Analytical of Seattle, Washington, for analysis of VOCs; polycyclic aromatic hydrocarbons (PAHs); polychlorinated biphenyls (PCBs); Resource Conservation and Recovery Act 8 metals; and copper, nickel, and zinc.

Based on the chemical results, the concentration of one analyte (lead in the composite sample from Area 5, A5-WA) exceeded the "Rule of 20". The exceedance of the "Rule of 20" indicated the waste had the potential to exceed the dangerous waste toxicity characteristic for lead based on the mass of lead in the sample. To evaluate the lead toxicity in sample A5-WA, the sample was analyzed using the TCLP per EPA Method 1311. The leachate from the TCLP had 1.23 milligrams per liter (mg/L) of lead that was below the dangerous waste toxicity characteristic threshold of 5 mg/L. The lab report is available in Appendix J.

Based on the results of chemical and TCLP analyses in 2021, a separate sample of drill cuttings from Areas 4 and 5 was composited (one composite sample in total) and submitted for a hazardous waste fish bioassay. Rainier Environmental of Tacoma, Washington, performed the bioassay in accordance with the Washington State Department of Ecology's (Ecology's) Publication 80-12.¹ The bioassay consisted of exposure of juvenile rainbow trout to the composite sample for 96 hours. Three replicates of the test were performed concurrently.

No mortality was observed during the fish bioassay and the sample was not designated as dangerous waste. The bioassay report is provided in Appendix J.

B.2.6 Pre-Excavation Sampling

Soil samples used for excavation confirmation samples were collected in advance of excavation work at select areas. Direct-push borings were used to collect the soil samples. The basis for collecting confirmation samples in advance of the excavation work is described below.

- During February 25 and March 1, 2021, drilling was used to collect confirmation base samples in advance of excavation at Areas 4, 5, 7, and 8. Drilling was used because the excavations were to be completed below the groundwater table and collection of base samples during excavation activities would not be representative due to the submerged base and loose soil. This approach was described in the approved CMP².
- Excavation was temporarily suspended at Area 4 during September 2021 after the initial proposed extent was excavated and two expansions were completed. The excavation was temporarily suspended to undertake further delineation of the extent of contaminated soil. During three mobilizations (October 29, 2021; December 14 to 17, 2021; and January 21, 2022), borings were stepped-out from the excavation limits to evaluate for in situ concentrations of contaminants of concern (COCs). Soil samples that were collected from the borings were used as confirmation samples because the analytical results of samples collected from the excavation were highly variable, for example, the concentrations detected in a primary and split sample sometimes varied as

¹ Washington State Department of Ecology (Ecology), 2020, Biological Testing Methods 80-12 for the Designation of Dangerous Waste: Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program, Olympia, Wash., publication no. 80-12, revised September 2020.

² Shannon & Wilson, 2021, Compliance monitoring plan, 8801 East Marginal Way S., Tukwila, Wash.: Report prepared by Shannon & Wilson, Inc., Seattle, Wash., 21-1-12567-024, for PACCAR Inc, Bellevue, Wash., March 15.

much as an order of magnitude. This approach was described in the Modified Excavation Plan for Area 4³ and was approved by the Ecology site project manager.⁴

The methods used for pre-excavation sampling are discussed below.

A Washington State licensed driller used a direct-push drill rig to collect pre-excavation samples. At direct-push locations, the static weight of the hydraulic probe rig, combined with percussive energy, were used to advance a series of hollow metal rods. A 2-inch-diameter, 5-foot-long probe sampler fitted with removable plastic sampling (sleeve) tubes were driven into undisturbed soil continuously from the ground surface to the desired depth of the boring. The bottom of the core tube had a plastic soil catcher used to retain soil when the tube was pushed into the subsurface. Upon retrieval of the sample sleeve, the plastic tube was sliced open and the soil was field-screened for contaminants and samples collected and logged. The locations of borings are shown in Figure 19.

Soil was visually described using Shannon & Wilson's soil identified system, which is a modified version of the Unified Soil Classification System. The soil description key and boring logs are provided in Appendix C.

Soil sample collection procedures, including labeling, transportation, and decontamination are described in Section B.4. After soil samples were collected, the borings were immediately backfilled with hydrated bentonite chips to the approximate level of the surrounding ground.

B.2.7 Imported Fill Evaluation

Imported fill was evaluated for gradation, chemical concentrations, and compaction characteristics prior to placement on the 8801 property. Information about the imported fill evaluation is provided in Appendix E.

B.3 EXCAVATION AND DISPOSAL

Removal of soil at remedial excavations occurred during September 15, 2021, through November 2021 and on August 31, 2022. The following sections discuss methods and observations.

³ Shannon & Wilson, 2022, Modified Excavation Plan for Area 4: Letter prepared by Shannon & Wilson, Seattle, Wash., project 21-1-12567-030, for PACCAR Inc, Bellevue, Wash., to Washington Dept. of Ecology, Shoreline, Wash., June 6.

⁴ Kelley, Chris, 2022, AO 6069, 8801 – Area 4 Technical Memo email: Email from Chris Kelley, Department of Ecology, Toxics Cleanup Program, Shoreline, Wash., to Meg Strong, Shannon & Wilson, Seattle, Wash., June 24.

B.3.1 Health and Safety

A Health and Safety Plan (HASP) was prepared to address health and safety considerations for the proposed remedial activities and meet requirements in federal (29 Code of Federal Regulations [CFR] 1910.120 and 1926) and state (Washington Administrative Code 296) regulations. The HASP was submitted and accepted by Ecology as an appendix in the CMP. The remediation contractor prepared a supplemental HASP that discussed health and safety considerations that were specific to their means and methods.

During fieldwork, planned field activities and relevant health and safety topics were discussed during daily tailgate meetings. Health and safety topics included, but were not limited to, action levels and proper use of personal protective equipment, working near heavy equipment, handling contaminated material, decontamination procedures, spill response, and fall protection.

No adverse health and safety events occurred during fieldwork; although, one “near miss” incident occurred when an operating roller compactor contacted an operating excavator. The safety of the operators was not adversely impacted; however, the roller compactor’s tire was punctured. The Contractor’s staff were operating both pieces of equipment. The contractor recorded a “near miss” report and evaluated potential causes and corrective actions. The roller compactor operator was provided additional training and moved to a different project site.

Monitoring of airborne lead concentrations was performed in accordance with the HASP and is discussed in Section B.3.4.

B.3.2 Soil Excavation, Stockpiling, and Disposal

Approximately 11,300 tons of contaminated soil were excavated from Areas 1 through 8 and disposed offsite, based on truck weight tickets, including approximately:

- 8,290 tons of PCB-impacted soil,
- 1,500 tons of metals-impacted soil,
- 1,090 tons of halogenated VOC-impacted soil,
- 340 tons of carcinogenic PAH-impacted soil, and
- 80 tons of total petroleum hydrocarbons as gasoline-range (TPH-G) impacted soil.

Soil was directly loaded into trucks for hauling offsite when practicable, otherwise the soil was stockpiled until being hauled offsite. A representative photo of excavation activities is provided as Exhibit B-1.



Exhibit B-1: Photo of Excavation at Area 2 on September 20, 2021. View Direction is North.

At times, soil was stockpiled for later offsite disposal due to the size of the excavations and limited access to portions of the excavations. Stockpiles were placed on pavement and covered with plastic sheeting. The plastic sheeting was secured using sandbags. Straw wattles were used to protect the stockpile from runoff.

Soil was hauled to Waste Management's 8th Avenue Reload Facility at 7400 8th Avenue S., Seattle, WA 98108. The soil was submitted under waste profile 135321OR (Section B.2.5). The soil was then transported for final disposition as non-hazardous waste at Waste Management's Columbia Ridge Landfill at 18177 Cedar Springs Lane, Arlington, OR 97812. Disposal certificates and truck tickets are provided as Appendix K.

B.3.3 Confirmation Soil Sampling

The goal of the remedial excavations was to remove soil containing excavation-specific COCs at concentrations above remediation limits (RLs), except in the shallow/near surface portion of Area 5 where the cleanup levels (CULs) for cadmium and chromium were used to determine the excavation limits, and in Areas 3, 7 and 8 where the CUL for gasoline-range hydrocarbons were used to determine excavation limits. Analysis of confirmation soil samples were used for performance monitoring.

Each remedial excavation had a unique analytical suite dependent upon the COCs present in the excavation. The list below details the analyses performed for confirmation samples at each remedial excavation and was discussed in the approved CMP.

Exhibit B-2: Summary of Analytical Suite for Remedial Excavation Confirmation Samples

Analyte	Method	Area							
		1	2	3	4	5**	6	7	8
TPH-G	NWTPH-Gx			X				X	X
cPAHs	EPA 8270 SIM		X						
PCB Aroclors	EPA 8082			X	X	X			
Dioxin/Furan	EPA 1613				X*				
PCE/TCE/VC	EPA 8260D	X							
Arsenic	EPA 6020B					X	X		
Copper	EPA 6020B			X	X				
Lead	EPA 6020B					X			
Cadmium	EPA 6020B					X			
Chromium	EPA 6020B					X			

NOTES:

* Dioxin/furan analysis in two base samples in the proximity of the location of C6 and DG-11-1 only.

** Shallow (1 -to 5-foot depth) samples were analyzed for lead, arsenic, cadmium, and chromium. Deeper samples were analyzed for lead, arsenic, and PCBs.

cPAHs = carcinogenic polycyclic aromatic hydrocarbons; EPA = U.S. Environmental Protection Agency; NWTPH-Gx = Northwest Total Petroleum Hydrocarbons – Gasoline Extended; PCB = polychlorinated biphenyl; PCE = tetrachloroethylene; SIM = selective oil monitoring; TCE = trichloroethylene; VC = vinyl chloride

Confirmation soil samples were collected from the sidewalls and bottom of each remedial excavation in accordance with the approved CMP. In excavations above the groundwater table, each sidewall and the bottom were sampled. Generally, samples were collected on 20-foot centers along sidewalls and throughout the bottom of the excavations with a minimum of one sample collected from each sidewall and base as outlined below:

- If the final excavation depth was 4 feet or less, a minimum of one sample from each sidewall was collected within the contaminant horizon identified during previous investigations or as noted during field observation.
- If the final excavation depth exceeded 4 feet, a minimum of one sample from each sidewall was collected from the center (or within the contaminant horizon) of each 3-foot-thick (or portion of each) vertical layer. The thickness of the individual sample layers was reduced to allow for more even sample distribution or accommodate field observations, when appropriate. For example, two samples from each sidewall when the excavation depth is 8 feet.
- Regardless of the total depth of the excavation, one sample from each fill layer observed in the excavation was collected. This may have required collection of additional sidewall samples, when appropriate.

- Bottom samples were collected on a 20-foot grid in excavations where groundwater was not encountered.
- When groundwater was encountered during the excavation, the lowermost sidewall sample was assumed to represent conditions at the water table.

In excavations where the base was likely to be below groundwater, borings were used to collect base confirmation samples in advance of the excavation work. The pre-excavation sampling is described in Section B.2.6. Borings were used to collect base samples because most of the excavations that extended below the water table were within the tidal zone and were not able to be completely dewatered due to the constant tidal influx. Samples from borings were used to target the proposed excavation depth more accurately than samples collected from an open excavation.

Sample results were used to expand the excavations if one or more excavation-specific COCs exceeded the RL/CUL, as relevant, were identified.

Quality assurance/quality control (QA/QC) of confirmation samples is discussed in Section B.4.

B.3.4 Monitoring for Airborne Lead

Monitoring for airborne lead was conducted during earthworks at Area 5. Concentrations of lead in soil at Area 5 were identified prior to the start of excavation. During earthwork, air monitoring was used to evaluate the potential exposure of workers to airborne lead in excess of the action level of 0.03 milligram per cubic meter (mg/m³). If the action level for lead was exceeded, requirements for training, medical monitoring, and air sampling are triggered. If the permissible exposure level of 0.05 mg/m³ was exceeded, additional requirements must be met, including use of respiratory protection equipment. Information pertaining to worker safety and health is in Occupational Safety and Health Administration (OSHA) 29 CFR 1926.62.

Monitoring was conducted via personal air monitoring and perimeter dust monitoring.

- **Personal air monitoring** was conducted using personal sampling pumps and cassettes attached to field staff. The selected field staff had dissimilar job roles so that samples were representative of possible exposure scenarios.
- **Perimeter dust monitoring** was conducted downwind of earthwork activity at Area 5 to evaluate air concentrations at the boundary of the work zone. An air particle counter was used to measure the concentration of dust.

The personal samples (cassettes) were representative of one 8-hour shift. Cassettes were analyzed by NVL Laboratories in Seattle, Washington, on a rushed turnaround using

NIOSH 7082 Flame Atomic Absorption method. Lead was not detected in the cassettes. Laboratory reports are available in Appendix D. A summary of lead air monitoring results is provided in Exhibit B-3.

Exhibit B-3: Analytical Results of Airborne Lead Monitoring

Sampling Date	Staff/Role	Sample ID	Detected Lead Concentration (mg/m ³)
September 16, 2021	Archeologist/Observer	S-1	< 0.0070
September 16, 2021	Environmental Consultant/Observer	S-2	< 0.0061
September 16, 2021	Excavator Operator	S-3	< 0.0062
September 20, 2021	Environmental Consultant/Observer	S-4	< 0.0069
September 20, 2021	Excavator Operator	S-5	< 0.0069

< = analyte not detected. Reported as less than the reporting limit.

Based on available information, airborne lead at Area 5 appeared unlikely to exceed action levels because lead was not detected in cassettes collected during initial excavation work and further excavation was predominantly in saturated soil which was observed to generate less dust. Because of this, sampling for personnel airborne lead was suspended on September 21, 2021. Dust monitoring using an air particle counter continued at Area 5. The air particle counter did not detect concentration of dust sufficient to trigger exposure alarms during excavation work.

B.3.5 Cultural Resources Monitoring

A Cultural Resources Monitoring and Inadvertent Discovery Plan (MIDP) was approved by the Washington Department of Archaeology and Historic Preservation and was included as an appendix in the approved CMP.

Archeological monitoring of ground-disturbing activities was undertaken by professional archeologists from Stell in accordance with the approved MIDP. The archeologists reviewed subsurface material for indications of potential archeological materials and prepared a monitoring report summarizing their findings, which is attached as Appendix L. No significant archeological materials were identified during site work.

B.3.6 Temporary Erosion and Sediment Control

In accordance with the CMP, Best Management Practices (BMPs) were implemented during remedial excavation activities to limit the potential from erosion and sediment transport, including:

- Placement of silt fences around the perimeter of the 8801 property.

- Covering of soil stockpiles with plastic sheets secured by sandbags.
- Placement of straw wattles around excavations, stormwater catch basins, and stockpiles.
- Covering of excavation sidewalls with plastic sheets secured by sandbags.

BMPs were inspected daily before remedial work commenced to check the integrity. If any deficiency was observed, a repair or replacement was made immediately. A representative photo of BMPs for temporary erosion and sediment control is provided below.



Exhibit B-4: Photo of Area 4 (left) and Area 5 (right) on September 17, 2021 View direction is west. Straw wattles are shown around the excavation perimeter. White plastic sheets are shown on excavation sidewalls. An orange silt fence is shown on the property boundary.

B.3.7 Decontamination Methods

Equipment that contacted contaminated soil was decontaminated. The decontamination procedure was as follows:

- Removal of gross contamination and particulate matter,
- Wash with a mixture of Tap water and non-phosphate detergent (Alconox™),
- Rinse with tap water,
- Rinse with distilled water rinse, and
- A final rinse with distilled water.

Decontamination water was disposed of with the excavated soil. A photo of the boot wash station is provided as Exhibit B-5.



Exhibit B-5: Photo of Area 1 with Boot Wash Station on September 21, 2021. View Direction is East.

B.3.8 Dewatering of Excavations

Water in excavations was pumped and treated in an on-site temporary treatment system consisting of settling tanks, sand filter, and treatment vessels filled with granular activated carbon. The treated water was discharged to the sanitary sewer under King County Discharge Authorization No. 4573-01 and City of Tukwila Public Works Constriction Permit PW21-0100. Because the excavations were conducted during two mobilizations spanning approximately one year, the King County Discharge Authorization was renewed as No. 4594-01 and the City of Tukwila permit was renewed with the same permit number. A process flow diagram is provided in Appendix I.

Prior to discharge, the treated water was analyzed for chemical concentrations and physical parameters per discharge authorization and constriction permit. The analytical results were within allowable criteria.

The King County Discharge Authorization No. 4594-01 was canceled effective February 3, 2023, due to completion of the project.

Approximately 111,000 gallons of treated water were discharged to the City of Tukwila's sanitary sewer. The County Discharge Authorization, City of Tukwila Public Works Constriction Permit, and monthly discharge monitoring reports are provided in Appendix I.

B.3.9 Surveying

Surveys of the lateral extent of excavations and the locations of confirmation samples were undertaken by True North Land Surveying Inc. Surveyors did not enter Areas 3 through 8 due to safety considerations because the depth was greater than 4 feet. The final depth of Areas 3 through 8 was measured from the sidewalls using a tape measure. The locations of base samples in Areas 3 through 8 were estimated by the sampler and sketched in field notes, except for base samples that were collected via drilling. The surveyed features, measured excavation base depths, and estimated base sample locations are incorporated into the figures in the main report.

B.3.10 Imported Fill Placement and Compaction

A discussion about the placement and compaction of imported fill is provided in Appendix E.

B.4 FIELD QUALITY ASSURANCE/QUALITY CONTROL

Field QA/QC procedures, discussed below, were established to ensure that samples were tracked from collection through analysis, evaluate the efficiency and reproducibility of sampling procedures, and ensure that sampling activities did not result in cross-contamination.

B.4.1 Quality Assurance/Quality Control Samples

QA/QC samples were collected to evaluate the reproducibility of the sampling techniques and the subsequent laboratory analysis. These samples included field duplicate samples, trip blank samples, and temperature blank samples.

B.4.1.1 Field Duplicate Samples

Field duplicate samples are a second sample collected from the same location as a primary samples. Field duplicates were submitted to the laboratory with a "dummy" sample number and time similar to a regular sample. Duplicates were analyzed for the same suite as the primary sample to allow for evaluation of the reproducibility of the sampling technique and the subsequent laboratory analysis. One field duplicate sample was collected for approximately every 20 soil samples. A list of field duplicates is provided below.

Exhibit B-6: List of Field Duplicate Samples

Field Duplicate Sample ID	Primary Sample ID	Date Collected
A1-BOT100:4	A1-BOT15:4	9/21/2021
A1-SIDE100:3	A1-SIDE2:3	9/21/2021
A2-BOT100:2.5	A2-BOT4:2.5	9/20/2021
A3-SIDE100:2	A3-SIDE18:2	9/28/2021
A3-SIDE101:5	A3-SIDE4:5	9/29/2021
A4-103:8	A4-3:8	2/25/2021
A4-SIDE102:6	A4-SIDE27:6	10/20/2021
A4-SIDE200:2	A4-SIDE50:2	12/14/2021
A4-SIDE203:1.5	A4-SIDE69:1.5	12/15/2021
A4-SIDE204:2.5	A4-SIDE73:2.5	12/15/2021
A4-SIDE217:2	A4-SIDE134:2	1/21/2022
A4-SIDE219:2	A4-SIDE171:2	8/26/2022
A4-SIDE220:2	A4-SIDE176:2	8/26/2022
A5-105:12	A5-5:12	3/1/2021
A5-SIDE101:2	A5-SIDE6:2	9/29/2021
A6-SIDE100:5	A6-SIDE3:5	10/5/2021
A7-SIDE100:7	A7-SIDE2:7	10/5/2021
A8-101:10	A8-1:10	2/25/2021
A8-SIDE100:3	A8-SIDE3:3	10/5/2021

B.4.1.2 Trip Blank Samples

Trip blanks are samples of laboratory deionized water that are placed with sample containers and used to evaluate for cross-contamination of volatile analytes during the handling/sampling process. One trip blank was submitted with each cooler containing soil or groundwater samples that were analyzed for volatile analytes (HVOCs or TPH-G/benzene, toluene, ethylbenzene, and xylenes). Samples for volatile analyses were grouped into as few coolers as possible to minimize trip blanks.

B.4.1.3 Temperature Blank Samples

Temperature blank samples are used to determine whether the samples have been maintained within the appropriate temperature range. The samples are provided by the laboratory and are not analyzed for chemical constituents.

B.4.2 Field Screening Methods

Soil was field screened to evaluate for indications of contamination. Based on previous environmental assessments at the 8801 property, the likely locations to encounter contamination are in fill, at the water table interface, in the water table smear (fluctuation) zone, at fill/native soil contacts, and at pronounced changes in permeability. However, the location of contamination, if any, is variable.

Field screening methods consisted of:

- Visual observations, such as discolorations, oily or shiny soil, metallic flakes, free product petroleum, or sheen.
- Olfactory observations.
- Photoionization detector readings were used to screen soil for VOCs. Readings exceeding ambient levels may indicate contamination is present in soil.

B.4.3 Sample Labeling

Sample container labels were completed immediately before or immediately following sample collection. Labels were completed using indelible ink. At a minimum, container labels included the following information:

- Date and time of collection,
- Location of the sample,
- Name or initials of sample collector,
- Unique sample identification,
- Analysis requested, and
- Chemical preservative used.

B.4.4 Sample Transportation

Samples were transported to the analytical laboratory within a cooler containing ice to ensure that samples are maintained within the appropriate temperature range (between 0 Celsius (°C) and 6°C). Samples were transported to the laboratory by field personnel except a courier was used for a couple of occasions.

B.4.5 Chain-of-Custody

Once a sample was collected, it remained in the custody of the sampler until delivery to the laboratory or release to the courier. Sample information was entered onto a chain-of-custody form along with the requested analyses.

Upon transfer of sample possession to subsequent parties, the chain-of-custody form was signed and timestamped by the person(s) transferring and receiving custody of the sample container. Upon receipt of samples at the laboratory, the condition of the samples was recorded by the receiver. Chain-of-custody records are included in the analytical reports prepared by the laboratory.

Upon receipt of samples (which were accompanied by a completed chain-of-custody record detailing requested analyses), the Laboratory Coordinator(s) or his/her delegate:

- Verified all paperwork, chain-of-custody records, and similar documentation;
- Logged in samples, assign unique laboratory sample numbers, and attach the numbers to the sample container(s);
- Performed any requested laboratory filtration and preservation;
- Opened a project file and enter data into the file; and
- Emailed a record of the sample receipt and log-in form to the Shannon & Wilson Project Manager noting any problems with the samples.

B.4.6 Investigation-Derived Waste

Investigation-derived waste (IDW) consisted of single-use personal protective equipment and other wastes and soil cuttings from drilling. The single use IDW was placed in doubled, heavy-duty plastic bags and disposed in a dumpster at the Shannon & Wilson office. The soil cuttings were placed in 55-gallon drums and stored on the 8801 property and later disposed with soil from the hotspot excavations as described in Section B.3.2.

Appendix C

Boring Logs and Well Decommissioning Logs

List of Boring Logs

A4-1	A4-SIDE45	A4-SIDE62	A4-SIDE76	A4-SIDE132	A5-8
A4-2	A4-SIDE49	A4-SIDE63	A4-SIDE78	A4-SIDE133	A5-9
A4-3	A4-SIDE50	A4-SIDE64	A4-SIDE79	A4-SIDE134	A5-10
A4-4	A4-SIDE52	A4-SIDE66	A4-SIDE82	A5-1	A7-1
A4-SIDE29	A4-SIDE55	A4-SIDE69	A4-SIDE92	A5-2	A8-1
A4-SIDE30	A4-SIDE56	A4-SIDE70	A4-SIDE125	A5-3	
A4-SIDE31	A4-SIDE57	A4-SIDE71	A4-SIDE126	A5-4	
A4-SIDE32	A4-SIDE59	A4-SIDE72	A4-SIDE127	A5-5	
A4-SIDE34	A4-SIDE60	A4-SIDE73	A4-SIDE130	A5-6	
A4-SIDE41	A4-SIDE61	A4-SIDE75	A4-SIDE131	A5-7	

List of Monitoring Well Decommissioning Logs

MW-1A	MW-14A	MW-28A	MW-40A	MW-47B
MW-6A(R)	MW-15A	MW-28B	MW-40B	MW-48A
MW-7A	MW-16A	MW-30A	MW-41A	MW-48B
MW-8A	MW-18A	MW-31A	MW-42A	MW-49A
MW-8B	MW-22A	MW-32A	MW-43A	MW-49B
MW-9A	MW-23	MW-33A	MW-44A	RW-3
MW-10	MW-24A	MW-34A	MW-45A	
MW-11A	MW-25A	MW-38A	MW-46A	
MW-12A	MW-27A	MW-39A	MW-47A	

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Sheet 1 of 2

Shannon & Wilson uses a soil identification system modified from the Unified Soil Classification System (USCS). Elements of the USCS and other definitions are provided on this and the following page. Soil descriptions are based on visual-manual procedures (ASTM D2488) and laboratory testing procedures (ASTM D2487), if performed.

Structure¹

Interbedded	Alternating layers of varying material or color with layers at least 1/4-inch-thick; singular: bed.
Laminated	Alternating layers of varying material or color with layers less than 1/4-inch-thick; singular: lamination.
Fissured	Breaks along definite planes or fractures with little resistance.
Slickensided	Fracture planes appear polished or glossy; sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps that resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay.
Homogeneous	Same color and appearance throughout.

Angularity and Shape¹

Angular	Sharp edges and unpolished planar surfaces.
Subangular	Similar to angular, but with rounded edges.
Subrounded	Nearly planar sides with well-rounded edges.
Rounded	Smoothly curved sides with no edges.
Flat	Width/thickness ratio > 3.
Elongated	Length/width ratio > 3.

Standard Penetration Test (SPT)³

Hammer	140 pounds with a 30-inch free fall. Rope on 6- to 10-inch-diameter cathead 2-1/4 rope turns, > 100 rpm. If automatic hammers are used, blow counts shown on boring logs should be adjusted to account for efficiency of hammer.
Sampler	10 to 30 inches long Shoe I.D. = 1.375 inches Barrel I.D. = 1.5 inches Barrel O.D. = 2 inches
N-Value	Sum blow counts for second and third 6-inch increments. Refusal: 50 blows for 6 inches or less or 10 blows for 0 inch.

Moisture Content

Dry	Absence of moisture, dusty, dry to the touch.
Moist	Damp but no visible water.
Wet	Visible free water, from below water table.

Notes:

¹Reprinted, with permission, from ASTM D2488 - 09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org.

²Adapted, with permission, from ASTM D2488 - 09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org.

³Penetration resistances (N-values) shown on boring logs are as recorded in the field and have not been corrected for hammer efficiency, overburden, or other factors.

Gradation

Poorly Graded	Narrow range of grain sizes present or, within the range of grain sizes present, one or more sizes are missing (Gap Graded). Meets criteria in ASTM D2487, if tested.
Well-Graded	Full range and even distribution of grain sizes present. Meets criteria in ASTM D2487, if tested.

Cementation¹

Weak	Crumbles/breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Plasticity²

Nonplastic	Cannot roll a 1/8-in. thread at any water content.	PI < 4
Low	A thread can barely be rolled and a lump cannot be formed when drier than the plastic limit.	4 < PI < 10
Medium	A thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. A lump crumbles when drier than the plastic limit.	10 < PI < 20
High	It takes considerable time rolling and kneading to reach the plastic limit. A thread can be rerolled several times after reaching the plastic limit. A lump can be formed without crumbling when drier than the plastic limit.	PI > 21

Additional Terms

Mottled	Irregular patches of different colors.
Bioturbated	Soil disturbance or mixing by plants or animals.
Diamict	Nonsorted sediment; sand and gravel in silt and/or clay matrix.
Cuttings	Material brought to surface by drilling.
Slough	Material that caved from sides of borehole.
Sheared	Disturbed texture, mix of strengths.

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Sheet 2 of 2

Unified Soil Classification System (USCS)
Modified From USACE Tech Memo 3-357, ASTM D2487, and ASTM D2488

Major Divisions	Symbol	Typical Identifications		
Coarse-Grained Soils (more than 50% retained on No. 200 sieve)	Gravels (more than 50% of coarse fraction retained on No. 4 sieve)	Gravel (less than 5% fines)	GW Well-graded Gravel; Well-graded Gravel with Sand	
		GP Poorly Graded Gravel; Poorly Graded Gravel with Sand		
	Silty or Clayey Gravel (more than 12% fines)	GM Silty Gravel; Silty Gravel with Sand		
		GC Clayey Gravel; Clayey Gravel with Sand		
	Sands (50% or more of coarse fraction passes the No. 4 sieve)	Sand (less than 5% fines)	SW Well-graded Sand; Well-graded Sand with Gravel	
			SP Poorly Graded Sand; Poorly Graded Sand with Gravel	
		Silty or Clayey Sand (more than 12% fines)	SM Silty Sand; Silty Sand with Gravel	
			SC Clayey Sand; Clayey Sand with Gravel	
	Fine-Grained Soils (50% or more passes the No. 200 sieve)	Silt and Clays (liquid limit less than 50)	Inorganic	ML Silt; Silt with Sand or Gravel; Sandy or Gravelly Silt
			CL Lean Clay; Lean Clay with Sand or Gravel; Sandy or Gravelly Lean Clay	
Organic		OL Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay		
Silt and Clays (liquid limit 50 or more)		Inorganic	MH Elastic Silt; Elastic Silt with Sand or Gravel; Sandy or Gravelly Elastic Silt	
		CH Fat Clay; Fat Clay with Sand or Gravel; Sandy or Gravelly Fat Clay		
		OH Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay		
Highly Organic Soils	Primarily organic matter, dark in color, and organic odor	PT Peat or other highly organic soils (see ASTM D4427)		

Acronyms and Abbreviations

ATD At Time of Drilling	MgO Magnesium Oxide	psi Pounds per Square Inch
Diam. Diameter	mm Millimeter	PVC Polyvinyl Chloride
Elev. Elevation	MnO Manganese Oxide	rpm Rotations per Minute
ft Feet	NA Not Applicable or Not Available	SPT Standard Penetration Test
FeO Iron Oxide	NP Nonplastic	USCS Unified Soil Classification System
gal Gallons	O.D. Outside Diameter	q _u Unconfined Compressive Strength
Horiz. Horizontal	OW Observation Well	VWP Vibrating Wire Piezometer
HSA Hollow-Stem Auger	pcf Pounds per Cubic Foot	Vert. Vertical
I.D. Inside Diameter	PID Photoionization Detector	WOH Weight of Hammer
in Inches	PMT Pressuremeter Test	WOR Weight of Rods
lbs Pounds	ppm Parts per Million	Wt Weight

Well and Backfill Symbols

	Bentonite Cement Grout
	Bentonite Grout
	Bentonite Chips
	Silica Sand
	Perforated or Screened Casing
	Surface Cement Seal
	Asphalt or Cap
	Slough
	Inclinometer or Non-perforated Casing
	Instrumentation Riser or Electrical Lead
	Vibrating Wire Piezometer with Designation

Relative Density Cohesionless Soils

N, SPT, Blows/ft	Relative Density
< 4	Very loose
4 - 10	Loose
10 - 30	Medium dense
30 - 50	Dense
> 50	Very dense

Relative Consistency Cohesive Soils

N, SPT, Blows/ft	Relative Consistency
< 2	Very soft
2 - 4	Soft
4 - 8	Medium stiff
8 - 15	Stiff
15 - 30	Very stiff
> 30	Hard

Percentages^{1, 2}

Trace	< 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

Notes:

Dual symbols (symbols separated by a hyphen, i.e., SP-SM, Sand with Silt) are used for soils with between 5% and 12% fines or when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart. Graphics shown on the logs for these soil types are a combination of the two graphic symbols (e.g., SP and SM).

Borderline symbols (symbols separated by a slash, i.e., CL/ML, Lean Clay to Silt; SP-SM/SM, Sand with Silt to Silty Sand) indicate that the soil properties are close to the defining boundary between two groups.

No. 4 size = 4.75 mm = 0.187 in.; No. 200 size = 0.075 mm = 0.003 in.

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LOG OF GEOPROBE

Date Started	2/25/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	2/25/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holocene Drilling
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Asphalt slab.	0.3					
		Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to coarse sand; trace fine gravel.			0			
5		Olive-brown, <i>Silty Sand with Gravel (SM)</i> ; moist; fine to coarse sand; fine to coarse, subangular to subrounded gravel. - Black sand from 5.5 to 5.7 feet. - Yellow-brown color from 7 to 8.3 feet.	5.5		0			5
		Gray with black laminations, <i>Lean Clay with Fine Sand (CL)</i> ; wet. - Piece of red brick at 9 feet.	8.3			During Drilling ∇		
10		BOTTOM OF GEOPROBE COMPLETED 2/25/2021	10.0					10

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-1</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	2/25/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	2/25/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holocene Drilling
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		<p>Soil Description</p> <p><i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i></p>						
		Asphalt slab.	0.3					
		Dark gray, Silty Sand (SM); moist; fine to medium sand; trace fine organics.			0			
5		- Crushed white rock from 4.3 to 4.5 feet.			0			5
		Dark gray Silt with Sand (ML); wet; fine sand; some wood organics.	8.0			During Drilling √		
10		<p>BOTTOM OF GEOPROBE</p> <p>COMPLETED 2/25/2021</p>	10.0					10

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-2

October 2022

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SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG.

GEOPROBE WELL 21-12567.GPJ 21-20447.GPJ 9/22/22 Log: CTC Rev: JXS Typ: LKN

LOG OF GEOPROBE

Date Started	2/25/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	2/25/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holocene Drilling
		Hole Diameter:	2.25 inches
		Typical Run Length	5 feet

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Concrete slab.						
		Dark brown to reddish brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to medium sand.	0.9		0			
		Dark gray, <i>Silty Sand (SM)</i> ; moist; some iron oxide staining; trace wood organics; fine sand.	3.8					
		Dark gray <i>Silt to Lean Clay (ML/CL)</i> ; moist to wet; fine sand; wood organics; trace fine to coarse, subrounded gravel.	6.0		0			
		Gray-brown to tan-brown, <i>Silty Sand (SM)</i> ; wet; fine sand.	9.0					
		BOTTOM OF GEOPROBE COMPLETED 2/25/2021	10.0			During Drilling ∇		

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- ∇ Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-3</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	2/25/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	2/25/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holocene Drilling
		Hole Diameter:	2.25 inches
		Typical Run Length	5 feet

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		<p>Soil Description</p> <p><i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i></p>						
		Asphalt slab.	0.3					
		Dark gray, Silty Sand (SM); moist to wet; fine to coarse sand; trace fine subrounded gravel; occasional silt lenses.			0			
5					0.2	Water Level Not Determined		5
10		BOTTOM OF GEOPROBE COMPLETED 2/25/2021	10.0					10
15								15

 Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
 - 2" Plastic Tube with Soil Recovery
- Run No.

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-4

October 2022
21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
FIG.

LOG OF GEOPROBE

Date Started	10/29/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	10/29/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Gray, Poorly Graded Gravel (GP); trace coarse sand.	0.3	(Symbol: Dotted pattern)				
		Gray, Silty Sand (SM); moist; fine to medium sand; trace gravel. - Transition to dark brown.						
5	R-2	Light gray wood pieces.	5.5	(Symbol: Horizontal lines)				5
		Dark gray, Sandy Silt (ML); wet; predominantly fine sand.	6.1	(Symbol: Vertical lines)		During Drilling		
			8.0					
10		BOTTOM OF GEOPROBE COMPLETED 10/29/2021						10

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE29</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	10/29/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	10/29/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Gray, Poorly Graded Gravel (GP); dry; crushed rock.	0.3	(Symbol: Dotted pattern)				
		Brown and gray, Silty Sand with Gravel (SM); moist; fine sand.	1.0					
		Brown, Silty Sand (SM); moist; then wet at 5.9 feet; trace gravel; fine to medium sand; some laminated brown silt.	6.9			During Drilling ∇		
5	R-2							5
10		BOTTOM OF GEOPROBE COMPLETED 10/29/2021						10
15								15

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE30

October 2022

21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG.

GEOPROBE WELL 21-12567.GPJ 21-20447.GPJ 9/22/22 Log: RBP Rev: JXS Typ: LKN

LOG OF GEOPROBE

Date Started	10/29/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	10/29/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Gray, Poorly Graded Gravel (GP); dry, crushed rock.	0.3	(Symbol: Dotted pattern)				
		Dark gray, Silty Sand (SM); moist; fine to medium sand; trace coarse sand. - Piece of gray plastic at 1.1 feet.						
5	R-2	- Wet at 6 feet and deeper.				During Drilling (Symbol: Inverted triangle)		5
			7.3					
10		BOTTOM OF GEOPROBE COMPLETED 10/29/2021						10

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

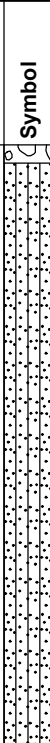
LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE31</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE





Date Started	10/29/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	10/29/21			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;">R-1</div> <div style="margin-bottom: 20px;">R-2</div> <div style="margin-bottom: 20px;">R-3</div> </div>		<p>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</p> <p>Gray, Poorly Graded Gravel (GP); dry; crushed rock.</p> <p>Brown to gray, Silty Sand (SM); moist; fine to medium sand; occasional silt lenses.</p> <p>- Transitions to dark gray at 1.7 feet.</p> <p>- Wet at 8.2 feet and deeper.</p>	<p>0.3</p> <p>9.9</p>			<p>During Drilling [∇]</p>		<p>5</p> <p>10</p> <p>15</p>
		<p>BOTTOM OF GEOPROBE COMPLETED 10/29/2021</p>						

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

-  2" Plastic Tube with Soil Recovery
-  2" Plastic Tube - No Soil Recovery
-  Run No.
-  Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE32

October 2022

21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG.

GEOPROBE WELL 21-12567.GPJ 21-20447.GPJ 9/22/22 Log: RBP Rev: JXS Typ: LKV

LOG OF GEOPROBE

Date Started	10/29/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	10/29/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Gray, Poorly Graded Gravel (GP); dry; crushed rock.	0.1	□				
		Brown, Sandy Silt with Gravel (ML); moist; some gravel; some tan sand.	1.0	□				
		Dark brown to dark gray, Silty Sand (SM); moist; alternating dark gray and brown layers of silty sand from 6.5 to 8 feet; trace fine gravel.	6.5	□				
5	R-2	- Trace cold-colored metal peices <1 millimeter diamter from 6 to 6.5 feet.	6.5	□		Water Level Not Determined		5
			8.0	□				
10		BOTTOM OF GEOPROBE COMPLETED 10/29/2021						10

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
 - 2" Plastic Tube - No Soil Recovery
- Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE34</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	10/29/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	10/29/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Concrete slab.		[Symbol]				
		Brown and gray <i>Silt with Sand (ML)</i> ; moist; fine sand.	0.8					
		Gray, <i>Silty Sand (SM)</i> ; moist; fine sand; strong burnt petroleum odor; black staining.	3.2					
		- Wood piece at 3.2 feet. Wood has strong petroleum odor and sheen.						
		BOTTOM OF GEOPROBE COMPLETED 10/29/2021	6.4			Water Level Not Determined		

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
 - 2" Plastic Tube with Soil Recovery
- Run No.

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE41

October 2022
21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
FIG.

LOG OF GEOPROBE

Date Started	10/29/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	10/29/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	7.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Concrete slab.						
	R-1	Dark brown, <i>Silty Sand (SM)</i> ; moist; fine to medium sand.	0.8					
		- Piece of wood at 2.3 feet with burnt petroleum odor.						
	R-2	Gray and brown <i>Silt (ML)</i> ; moist; trace sand.	4.0					
		- Piece of red rubber at 5.5 feet.						
		BOTTOM OF GEOPROBE COMPLETED 10/29/2021	6.0			Water Level Not Determined		

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
 - 2" Plastic Tube with Soil Recovery
- Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE45</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	7.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Brown, Silty Sand (SM); moist; fine to medium sand.		[Symbol: Dotted pattern]				
	R-2	Brown, Poorly Graded Sand (SP); moist; fine sand; trace silt.	4.6	[Symbol: Dotted pattern]				5
		Gray, Sandy Silt (ML); moist; some iron oxide staining.	6.0	[Symbol: Horizontal lines]				
		BOTTOM OF GEOPROBE COMPLETED 12/14/2021	6.4	[Symbol: Horizontal lines]		Water Level Not Determined		

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
 - 2" Plastic Tube with Soil Recovery
- Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE49</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt slab.	0.3					
		Brown, <i>Poorly Graded Sand (SP)</i> ; moist; fine to medium sand; trace silt.						
5	R-2	Brown and gray, <i>Poorly Graded Gravel with Sand (GP)</i> ; wet; little fine to coarse sand; trace silt.	5.0			During Drilling		5
		Brown, <i>Sandy Silt (ML)</i> ; wet; fine to coarse sand.	7.0					
			7.9					
10		BOTTOM OF GEOPROBE COMPLETED 12/14/2021						10
15								15

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE50</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h1 style="margin: 0;">FIG.</h1>

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	12/14/21			Typical Run Length	5 feet
Total Depth (ft)	16.4	Drilling Company:	Holt Services	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt slab.	0.3					
		Gray, Poorly Graded Gravel with Sand (GP); moist; fine to coarse sand; subangular to angular gravel.	1.5					
		Brown to reddish brown, Silty Sand (SM); moist; fine to medium sand; areas of gray.						
5	R-2	- Piece of asphalt at 6 feet. Wet at 6 feet and deeper.				During Drilling		5
	R-3	- Heavy sheen on soil with no observed odor at 7 to 7.4 feet.						
		- Piece of wood at 9.2 feet.						
10	R-4	Gray, Sandy Silt (ML); wet; fine sand.	11.0					10
		- Piece of purple-colored concrete at 12 feet.						
15	R-5							15
		BOTTOM OF GEOPROBE COMPLETED 12/14/2021	16.4					

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE52</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches
		Typical Run Length	5 feet

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt slab.	0.3					
		Brown, Silty Sand (SM); moist; fine to medium sand; trace fine gravel.	1.0					
		Light tan Silt (ML); moist.	1.7					
		Brown, Silty Sand with Gravel (SM); moist; fine to medium sand.						
5	R-2	Brown, Silty Sand (SM); wet; fine to medium sand.	5.0			During Drilling ∇		5
		- Transition to dark gray at 6.5 feet.						
		- Iron oxide staining from 7.8 to 8 feet.	8.0					
10		BOTTOM OF GEOPROBE COMPLETED 12/14/2021						10

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE55</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt slab.	0.3					
		Brown, <i>Sandy Silt (ML)</i> ; moist; fine sand; some gravel from 0.3 to 0.6 feet.						
		- Few tan-colored silt clasts from 0.6 to 1.6 feet.	1.8					
		Brown, <i>Silty Sand (SM)</i> ; moist; fine to medium sand.						
5	R-2							5
		- Iron oxide staining from 6 to 6.5 feet.	6.5			Water Level Not Determined		
10		BOTTOM OF GEOPROBE COMPLETED 12/14/2021						10

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
 - 2" Plastic Tube - No Soil Recovery
- Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE56</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.3	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt slab.	0.3					
		Dark brown to brown, <i>Silty Sand with Gravel (SM)</i> ; moist; fine to coarse sand.	0.9					
		- Trace tan-colored silt clasts from 0.6 to 1.7 feet.						
		Gray, <i>Silty Sand (SM)</i> ; moist; predominantly fine sand.						
5	R-2							
		- Trace gold- and silver-colored metal pieces <1-millimeter-diameter from 6 to 6.3 feet.						
10	R-3							
		- Wet at 10.4 feet and deeper.				During Drilling		
	R-4							
		- Piece of concrete tile at 14 feet.	14.6					
15		Gray <i>Silt (ML)</i> .	15.3					
		BOTTOM OF GEOPROBE COMPLETED 12/14/2021						

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE57

October 2022

21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG.

GEOPROBE WELL 21-12567.GPJ 21-20447.GPJ 9/22/22
Log: RBP
Rev: JXS
Typ: LKN

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt slab.	0.3					
		Brown and gray, <i>Silty Sand (SM)</i> ; moist; fine to medium sand; trace coarse sand and fine gravel.						
5	R-2							
	R-3	Dark gray, <i>Sandy Silt (ML)</i> ; moist; fine sand. - Trace gold- and silver-colored metal pieces at <1-millimeter-diameter from 7.5 to 9 feet.	7.4					
10	R-4	- Tan-colored silt clast at 10.8 feet.						
		Dark gray, <i>Silty Sand (SM)</i> ; wet; fine to medium sand.	11.3			During Drilling ▽		
	R-5	Dark gray <i>Silt (ML)</i> ; wet; trace sand.	13.7					
15		BOTTOM OF GEOPROBE COMPLETED 12/14/2021	15.0					

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- ▽ Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
LOG OF GEOPROBE A4-SIDE59	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	16.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt slab.	0.4					
		Gray, Silty Sand (SM); moist; fine to medium sand; some brown-colored lenses; trace gravel.						
5	R-2	- 3-inch wood piece at 7.5 feet.						5
10	R-3	- Piece of concrete at 10.6 feet.						10
15	R-4	- Wet at 13 feet and deeper. - Transition to dark gray color at 14 feet.				During Drilling <input checked="" type="checkbox"/>		15
		BOTTOM OF GEOPROBE COMPLETED 12/14/2021	16.0					

Typ: LKN
Rev: JXS
Log: RBP
GEOPROBE WELL 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE60

October 2022
21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
FIG.

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	16.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt slab.	0.3					
		Brown, Silty Sand with Gravel (SM); moist; few rounded gravel; fine to medium sand. - 1-inch lens of tan-colored silt at 1.2 feet.						
5	R-2							5
	R-3							
10	R-4	- Some lenses of dark gray at 10.5 feet and deeper.						10
	R-5							
15			15.2					15
		BOTTOM OF GEOPROBE COMPLETED 12/14/2021						

Typ: LKV
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
 - 2" Plastic Tube - No Soil Recovery
- Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE61</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Brown to gray, <i>Silty Sand (SM)</i> ; moist; fine to medium sand.		•••••				
5	R-2	- Iron oxide staining at 5.8 feet.		•••••				5
	R-3	- Wet at 7 feet and deeper.		•••••		∇		
10	R-4			•••••				10
15	R-5		15.0	•••••				15

Typ: RBP
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE62</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Brown, Silty Sand (SM); moist; fine to medium sand. - Wet throughout boring due to surface runoff into borehole.						
5	R-2	- Transition to gray color at 5.9 feet.				Water Level Not Determined		5
10	R-3							10
15		BOTTOM OF GEOPROBE COMPLETED 12/14/2021	13.1					15

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery

 2" Plastic Tube with Soil Recovery
 Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE63</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/14/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/14/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Gray to light brown to light red-brown, <i>Silty Sand (SM)</i> ; moist; fine to medium sand.		[Symbol]				
5	R-2	- Wet at 5 feet and deeper.		[Symbol]		During Drilling [Symbol]		5
	R-3			[Symbol]				
10	R-4	- Piece of wood at 10.8 feet.		[Symbol]				10
	R-5			[Symbol]				
15		BOTTOM OF GEOPROBE COMPLETED 12/14/2021	14.2					15

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE64</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h3 style="margin: 0;">FIG.</h3>

LOG OF GEOPROBE

Date Started	12/15/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/15/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	7.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Olive-brown, Silty Sand (SM); moist to wet at 5 feet below ground surface (bgs); crushed brick at 1.3 feet bgs; iron oxide staining.		[Symbol]				
	R-2							
5			7.0			During Drilling [Symbol]		5
		BOTTOM OF GEOPROBE COMPLETED 12/15/2021						
10								10
15								15

Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE66</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/15/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/15/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt.	0.3					
		Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; plastic pieces at 1 foot below ground surface (bgs); fine to coarse sand and gravel.	1.8					
		Yellow, <i>Lean Clay (CL)</i> ; moist; homogeneous.	2.2					
		Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to coarse sand.						
5	R-2							5
		Dark gray, <i>Silty Sand (SM)</i> ; moist; rock at 7.2 feet bgs.	6.5			Water Level Not Determined		
10		BOTTOM OF GEOPROBE COMPLETED 12/15/2021	10.0					10

Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
 - 2" Plastic Tube with Soil Recovery
- Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE69</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/15/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/15/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt.	0.3					
		Dark gray, <i>Silty Sand (SM)</i> ; lenses of yellow, lean clay; fine to coarse sand; trace plastic pieces; crushed rock at 6 feet below ground surface.						
5	R-2							5
		Brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to coarse sand.	6.0			Water Level Not Determined		
10		BOTTOM OF GEOPROBE COMPLETED 12/15/2021	10.0					10

Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
 - 2" Plastic Tube - No Soil Recovery
- Run No.

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE70

October 2022
21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
FIG.

LOG OF GEOPROBE

Date Started	12/15/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/15/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt.	0.3					
		Gray, <i>Silty Sand (SM)</i> to yellow, <i>Lean Clay (CL)</i> ; moist; crushed rock at 6.5 feet below ground surface (bgs); trace plastic pieces.						
5	R-2							
	R-3	Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist to wet at 8.5 feet bgs; fine to coarse sand; some iron oxide staining at 9 feet bgs.	7.0			During Drilling <input checked="" type="checkbox"/>		
10	R-4							
		Dark gray, <i>Silty Sand (SM)</i> ; wet; fine to medium sand; homogeneous.	11.5					
	R-5	Gray to dark gray, laminated, <i>Lean Clay (CL)</i> and <i>Silt (ML)</i> ; wet; some fine sand.	13.3					
15		BOTTOM OF GEOPROBE COMPLETED 12/15/2021	15.0					

Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE71

October 2022
21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
FIG.

LOG OF GEOPROBE

Date Started	12/15/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/15/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt.	0.3	[Symbol]				
		Dark brown to gray, Poorly Graded Sand with Silt (SP-SM); fine to medium sand; medium gravel.		[Symbol]				
5	R-2	Laminated black and dark brown, Silty Sand (SM); moist.	6.0	[Symbol]		Water Level Not Determined		5
10		BOTTOM OF GEOPROBE COMPLETED 12/15/2021	10.0	[Symbol]				10

Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
 - 2" Plastic Tube with Soil Recovery
- Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE72</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/15/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/15/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Asphalt.	0.3	[Symbol]				
		Dark brown to gray, Poorly Graded Sand with Silt (SP-SM); fine to medium sand; medium gravel.		[Symbol]				
5	R-2	Laminated black and dark brown, Silty Sand (SM); moist.	6.0	[Symbol]		Water Level Not Determined		5
10		BOTTOM OF GEOPROBE COMPLETED 12/15/2021	10.0	[Symbol]				10

Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
 - 2" Plastic Tube with Soil Recovery
- Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE73</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h3 style="margin: 0;">FIG.</h3>

LOG OF GEOPROBE

Date Started	12/15/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/15/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to coarse sand; trace fine gravel; crushed rock at 7.8 feet below ground surface (bgs).		•••••				
5	R-2			•••••				5
	R-3	Dark gray to dark brown, <i>Silty Sand (SM)</i> ; moist to wet at 7.5 feet bgs; fine to coarse sand; trace fine gravel.	7.7	•••••				
10	R-4			•••••				10
	R-5			•••••				
15	BOTTOM OF GEOPROBE COMPLETED 12/15/2021		15.0	•••••		During Drilling ∇		15

Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

-  2" Plastic Tube - No Soil Recovery
-  2" Plastic Tube with Soil Recovery
-  Run No.
-  Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE75</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/15/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/15/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Dark gray to dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to coarse sand; trace fine gravel; crushed rock at 9 feet below ground surface (bgs).		•••••				
5	R-2			•••••				5
	R-3			•••••				
10	R-4	Dark gray to dark brown, <i>Silty Sand (SM)</i> ; moist to wet at 13 feet bgs; fine to coarse sand; trace fine gravel.	9.0	•••••		▽		10
	R-5	Dark gray <i>Silt with Sand (ML)</i> ; wet; fine sand.	13.4	•••••				
15		BOTTOM OF GEOPROBE COMPLETED 12/15/2021	15.0	•••••				15

Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE76</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h2 style="margin: 0;">FIG.</h2>

LOG OF GEOPROBE

Date Started	12/15/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	12/15/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holt Services	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Dark gray to dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to coarse sand; trace fine gravel.		•••••				
5	R-2			•••••				5
	R-3	Dark gray to dark brown, <i>Silty Sand (SM)</i> ; wet; fine to coarse sand; trace fine gravel.	7.0	•••••		∇		
10	R-4	Dark gray <i>Silt with Sand (ML)</i> ; wet; fine sand.	10.0	•••••				10
	R-5			•••••				
15		BOTTOM OF GEOPROBE COMPLETED 12/15/2021	15.0	•••••				15

 Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE78

October 2022
21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
FIG.

LOG OF GEOPROBE

Date Started	12/16/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	12/16/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holt Services	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description <i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
5	R-1	Dark gray to dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to coarse sand; trace fine gravel.		[Symbol]				5
	R-2		6.8					
	R-3	Dark gray to dark brown, <i>Silty Sand (SM)</i> ; wet; fine to coarse sand; trace fine gravel.		[Symbol]		During Drilling ▽		
10	R-4	Dark gray <i>Silt with Sand (ML)</i> ; wet; fine sand.	10.2					10
	R-5							
15		BOTTOM OF GEOPROBE COMPLETED 12/16/2021	15.0					15

 Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE79

October 2022 21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG.

LOG OF GEOPROBE

Date Started	12/16/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	12/16/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Dark brown to olive-brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist to wet at 5.5 feet below ground surface (bgs); fine to coarse sand; trace gravel.		•••••				
5	R-2			•••••				5
	R-3	Dark gray, <i>Silty Sand (SM)</i> ; wet; fine to medium sand; black staining with slight petroleum odor from 8 to 9 feet bgs and from 10 to 10.3 feet bgs.	7.5	•••••		▽		
10	R-4			•••••				10
	R-5			•••••				
15		BOTTOM OF GEOPROBE COMPLETED 12/16/2021	15.0	•••••				15

Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE82</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	12/17/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	12/17/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holt Services	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	R-1	Dark brown, <i>Poorly Graded Sand with Clay (SP-SC)</i> ; moist to wet at 5.5 feet; fine to medium sand.						
5	R-2	Dark brown, <i>Lean Clay with Sand (CL)</i> ; wet; fine sand.	7.3			During Drilling		5
10	R-3	Dark brown, <i>Silty Sand (SM)</i> ; wet; fine to medium sand.	13.2					10
15		BOTTOM OF GEOPROBE COMPLETED 12/17/2021	15.0					15

 Typ: LKN
 Rev: CTC
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE92

October 2022
21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
FIG.

LOG OF GEOPROBE

Date Started	1/21/22	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	1/21/22			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holt Services	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Gray, <i>Poorly Graded Sand (SP)</i> ; moist; fine to medium sand.		[Symbol]				
		Brown, <i>Silty Sand (SM)</i> ; moist; fine to medium sand.	0.9	[Symbol]				
		Gray to very dark gray, <i>Poorly Graded Sand (SP)</i> ; moist; predominantly fine to medium sand.	2.2	[Symbol]				
5	2	- Wet at 5.4 feet and deeper.		[Symbol]		During Drilling ▽		5
	3	Brown, <i>Silty Sand (SM)</i> ; wet; predominantly fine to medium sand.	8.0	[Symbol]				
10	4	- Transitions to gray at 12 feet.		[Symbol]				10
		No recovery.	14.0	[Symbol]				
15		BOTTOM OF GEOPROBE COMPLETED 1/21/2022	15.0					15

Typ: LKV
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE125</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	1/21/22	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	1/21/22	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	8.0	Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches
		Typical Run Length	5 feet

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Brown to gray brown, <i>Silty Sand (SM)</i> ; moist; predominantly fine to medium sand.		[Symbol]				
		Brown <i>Silt (ML)</i> ; moist; trace fine sand.	1.9					
5	2	Gray, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; predominantly fine to medium sand. - Wet at 5.4 feet and deeper. No recovery.	5.0 6.0	[Symbol]		∇ During Drilling		5
		BOTTOM OF GEOPROBE COMPLETED 1/21/2022	8.0					

Typ: LKV
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 3 2" Plastic Tube - No Soil Recovery
- 2 2" Plastic Tube with Soil Recovery
- Run No.
- ∇ Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE126</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	1/21/22	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	1/21/22			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holt Services	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Brown and gray, <i>Silty Sand (SM)</i> ; moist; predominantly fine sand.						
5	2	- Wet at 6.3 feet and deeper.						5
		Gray, <i>Poorly Graded Sand (SP)</i> ; wet; predominantly fine sand; increasing medium sand with depth; silty in places.	6.7			During Drilling		
10	3	- Lense of brown silt 1-inch at 9 feet.						10
	4	- Transitions to dark gray at 13.6 feet.						
15		No recovery.	14.6					15
		BOTTOM OF GEOPROBE COMPLETED 1/21/2022	15.0					

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE127

October 2022

21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG.

GEOPROBE WELL 21-12567.GPJ 21-20447.GPJ 9/22/22
Typ: LKN
Rev: JXS
Log: RBP

LOG OF GEOPROBE

Date Started	1/21/22	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	1/21/22	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
Drilling Company:		Holt Services	
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Asphalt slab.	0.3					
		Gray, Poorly Graded Gravel (GP); dry; subangular to angular gravel; trace fine to coarse sand; trace silt.	0.6					
		Gray, Silty Sand (SM); moist; predominantly fine to medium sand; few tan silt clasts <0.5-inch-diameter.						
5	2	Brown, Poorly Graded Gravel with Sand (GP); moist; subangular to angular gravel; fine to coarse sand; trace silt.	5.1					5
10	3	- Wet at 10 feet and deeper.						10
		Dark gray, Silty Sand (SM); wet; predominantly fine sand.	10.8					
		- Rock crushed by drill action at 10.8 feet.	11.3					
		No recovery.						
15		BOTTOM OF GEOPROBE COMPLETED 1/21/2022	15.0					15

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A4-SIDE130

October 2022
21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
FIG.

LOG OF GEOPROBE

Date Started	1/21/22	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	1/21/22			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services	Hole Diameter:	2.25 inches



Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Asphalt slab.	0.3	■				
		Gray, <i>Poorly Graded Gravel (GP)</i> ; moist; subangular to angular gravel, some fine to coarse sand.	0.5	▨				
		Brown, <i>Silty Sand (SM)</i> ; moist; fine to coarse sand; trace fine angular gravel. - Transitions to gray at 1.7 feet. Some tan silt clasts <1/2-inch-diameter from 1.7 to 5 feet.		▩				
5	2	Gray, <i>Poorly Graded Gravel (GP)</i> ; moist; gravel crushed by drill action; subangular to angular gravel; some fine to coarse sand; few brown silt.	5.0	▧				5
		No recovery.	6.6			Water Level Not Determined		
10		BOTTOM OF GEOPROBE COMPLETED 1/21/2022	10.0					10

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

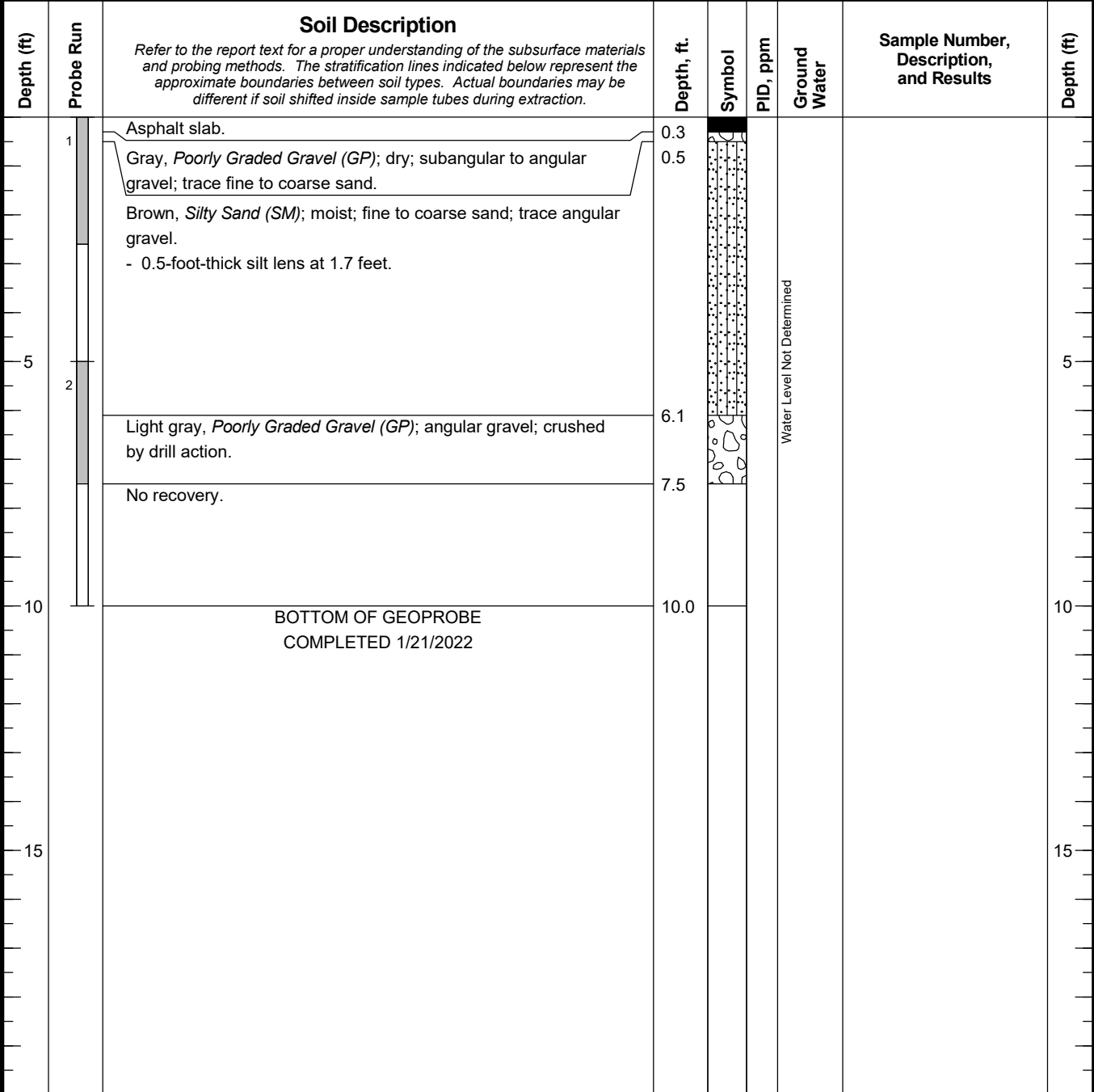
LEGEND

-  2" Plastic Tube - No Soil Recovery
 2" Plastic Tube with Soil Recovery
 Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE131</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	1/21/22	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	1/21/22			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services	Hole Diameter:	2.25 inches



Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
 2" Plastic Tube with Soil Recovery
 Run No.

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE132</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	1/21/22	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	1/21/22	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services
		Hole Diameter:	2.25 inches
		Typical Run Length	5 feet

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Asphalt slab.	0.3					
		Gray, <i>Silty Sand with Gravel (SM)</i> ; moist; fine to medium sand; fine subangular to angular gravel. - Few tan silt clasts <0.5-inch-diameter from 1.1 to 2.7 feet.	2.7					
		Brown, <i>Silty Sand (SM)</i> ; moist; predominantly fine sand.	5.7					
5	2	- Wet at 5 feet and deeper.	6.6			During Drilling ∇		5
		Gray, <i>Poorly Graded Gravel (GP)</i> ; dry; angular gravel; crushed by drill action.	7.7					
		Brown, <i>Silty Sand (SM)</i> ; wet; predominantly fine to medium sand. - 1-inch lens of dark gray silt at 6.6 and 7.1 feet.	10.0					
		No recovery.						
10		BOTTOM OF GEOPROBE COMPLETED 1/21/2022						10

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE133</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	1/21/22	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	1/21/22	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	10.0	Drilling Company:	Holt Services
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Asphalt slab.	0.2					
		Olive-gray to gray-brown, <i>Silty Sand (SM)</i> ; moist; fine to medium sand. - Some <0.5-inch-diameter brown silt clasts from 0.9 to 1.7 feet. - Iron oxide at 2.6 feet. - Decreasing silt content below 3 feet.						
5	2	- Wet at 5.5 feet and deeper.				During Drilling		5
		Yellow-brown <i>Silt (ML)</i> ; moist. - Transition to black at 7.3 feet.	6.7					
		No recovery.	7.8					
10		BOTTOM OF GEOPROBE COMPLETED 1/21/2022	10.0					10

Typ: LKN
 Rev: JXS
 Log: RBP
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/22/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A4-SIDE134</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	3/1/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	3/1/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holocene Drilling	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Concrete slab.						
		Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to coarse sand; trace gravel.	0.8		0			
		Olive-brown, <i>Lean Clay (CL)</i> ; moist; trace fine sand.	6.0					
		Olive-brown <i>Silt with Sand (ML)</i> ; wet; fine to medium sand.	7.4		0	During Drilling ∇		
		Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; wet; fine to coarse sand.	9.7					
		Dark gray with white specks, <i>Poorly Graded Sand (SP)</i> ; wet; fine to medium sand; trace silt.	11.5		0			
		BOTTOM OF GEOPROBE COMPLETED 3/1/2021	15.0					

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.*
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A5-1</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h2 style="margin: 0;">FIG.</h2>

LOG OF GEOPROBE

Date Started	3/1/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	3/1/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holocene Drilling	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Concrete slab.						
		Brown Silt with Sand and Gravel (ML); moist; fine sand and gravel.	0.8					
		Olive-brown, Lean Clay (CL); moist; fine to medium sand.	2.0		0			
5		Olive-brown, Silty Sand (SM); moist to wet; fine to medium sand.	5.0		0			5
		- Layer of crushed white rock at 8.8 feet.						
10						During Drilling		10
		Dark gray, Poorly Graded Sand (SP); wet; fine to medium sand.	13.0		0			
15		BOTTOM OF GEOPROBE COMPLETED 3/1/2021	15.0					15

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations
8801 East Marginal Way S
Tukwila, Washington

LOG OF GEOPROBE A5-2

October 2022

21-1-12567-030

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG.

GEOPROBE WELL 21-12567.GPJ 21-20447.GPJ 9/27/22 Log: CTC Rev: JXS Typ: LKN

LOG OF GEOPROBE

Date Started	3/1/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	3/1/21			Typical Run Length	5 feet
Total Depth (ft)	12.0	Drilling Company:	Holocene Drilling	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Asphalt slab.	0.4					
		Dark brown, Poorly Graded Sand with Silt and Gravel (SP-SM); moist becoming wet; fine to coarse sand and gravel.			0			
5		- Crushed rock from 4.5 to 5 feet and 9.3 to 10 feet depth.			0			5
10		- Piece of metal at 9 feet depth. - Black staining at 9.2 feet depth.			0			10
		Gray, Poorly Graded Sand with Clay (SP-SC); wet; fine to coarse sand; fine subangular to angular gravel.	11.0		0			
		BOTTOM OF GEOPROBE COMPLETED 3/1/2021	12.0					

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A5-3</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	3/1/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	3/1/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holocene Drilling	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Asphalt slab.	0.4					
		Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to coarse sand; asphalt pieces; trace gravel.			0			
		Olive-brown <i>Silt with Sand (ML)</i> ; moist; fine sand; iron oxide staining.	3.7					
5		- Piece of metal at 6.5 feet depth.						
		Olive-brown to light gray tan, <i>Silty Sand (SM)</i> ; wet; fine sand; homogeneous.	7.7		0	During Drilling		
10								
		Dark gray with white specks; <i>Poorly Graded Sand (SP)</i> ; wet; fine to medium sand.	13.2		0			
15		BOTTOM OF GEOPROBE COMPLETED 3/1/2021	15.0					

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

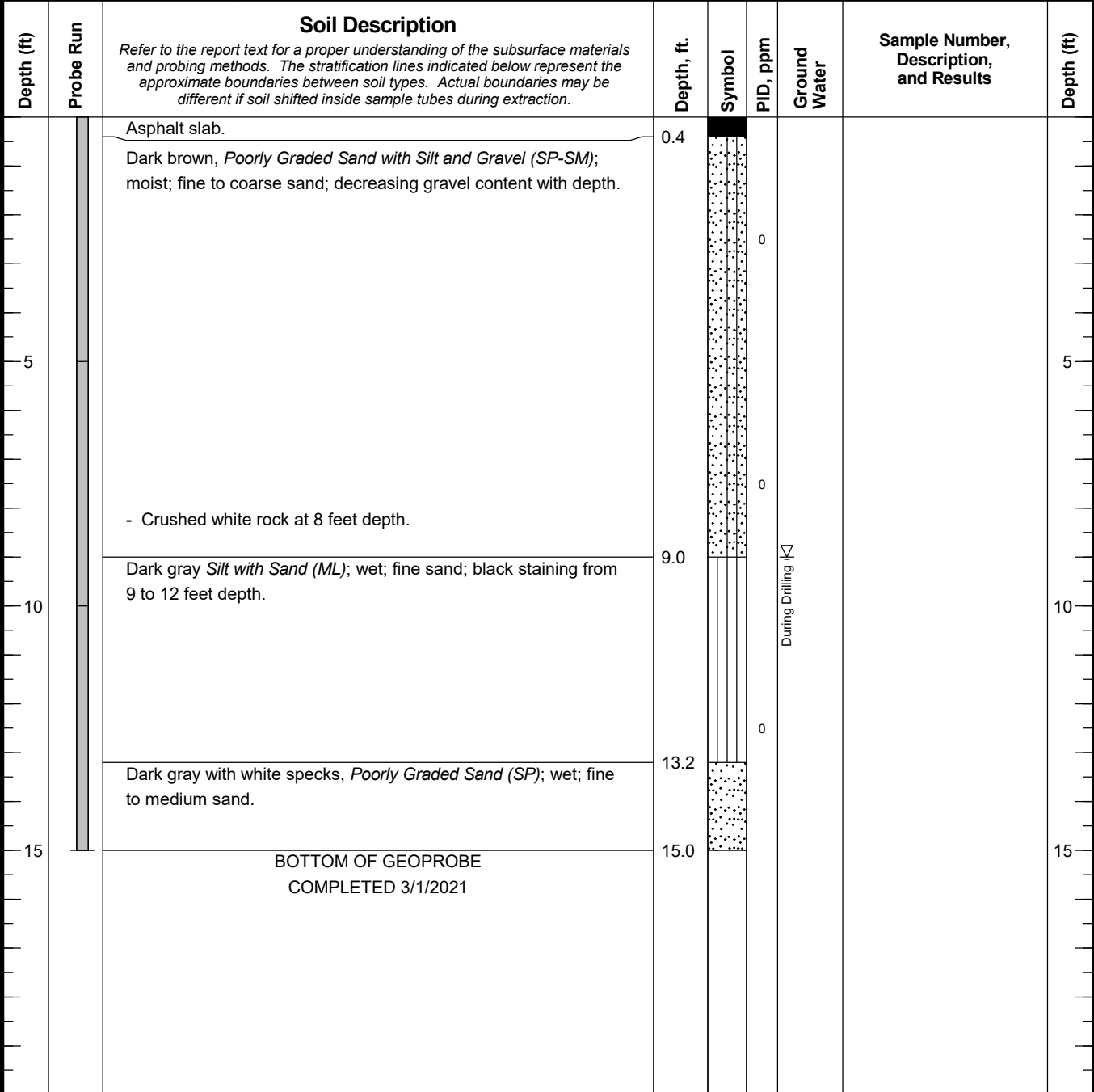
LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A5-4</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	3/1/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	3/1/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holocene Drilling	Hole Diameter:	2.25 inches



Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A5-5</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	2/25/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	2/25/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Holocene Drilling
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>						
		Asphalt slab.	0.4					
		Dark red-brown with black interbeds, <i>Poorly Graded Sand (SP)</i> ; wet; asphalt pieces, metal scrap, and glass; iron oxide staining.			0			
5								5
		Dark gray to light tan-gray <i>Silt with Sand (ML)</i> ; wet; fine sand.	8.0		0	▽		
10						During Drilling		10
		Dark gray with white specks, <i>Poorly Graded Sand (SP)</i> ; wet; fine to medium sand.	13.0		0			
15			15.0					15
		BOTTOM OF GEOPROBE COMPLETED 2/25/2021						

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A5-6</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. <small>Geotechnical and Environmental Consultants</small>	FIG.

LOG OF GEOPROBE

Date Started	3/1/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	3/1/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holocene Drilling	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Asphalt slab.	0.4					
		Dark brown to olive, <i>Poorly Graded Sand with Silt and Gravel (SP-SM)</i> ; moist; iron oxide staining; decreasing gravel content with depth.			0			
5								5
		Dark gray, <i>Lean Clay with Sand (CL)</i> ; moist; fine to coarse sand; paper pieces.	8.4					
		Yellow stone masonry.	9.0					
		White crushed rock.	9.5					
10		Olive-brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; wet; scattered brick fragments; fine to coarse sand.	9.8			During Drilling		10
		Dark gray to light gray <i>Silt to Lean Clay (ML/CL)</i> ; wet; fine sand.	12.0		0			
		Dark gray with white specks, <i>Poorly Graded Sand (SP)</i> ; wet; fine to medium sand.	13.6					
15		BOTTOM OF GEOPROBE COMPLETED 3/1/2021	15.0					15

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A5-7</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	3/1/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	3/1/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holocene Drilling	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Asphalt slab.	0.3					
		Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; trace fine subangular gravel.			0			
		- Crushed rock at 7.3 feet depth.	7.5		0	∇		
		Olive-gray to dark gray <i>Silt with Sand (ML)</i> ; black staining with sheen from 7.5 to 10 feet bgs.				During Drilling		
		- Crushed white rock at 8 feet depth.						
		Dark brown to dark gray, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; wet; some black staining.	10.0		0			
		- Wood organics at 12 feet depth.						
		Dark gray with white specks, <i>Poorly Graded Sand (SP)</i> ; wet; fine to medium sand.	13.4					
		BOTTOM OF GEOPROBE COMPLETED 3/1/2021	15.0					

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A5-8</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	2/25/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	2/25/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Drilling Company:	Holocene Drilling
		Typical Run Length	5 feet
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Asphalt slab.	0.3					
		Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; fine to medium sand.						
		Yellow-brown <i>Silt with Sand (ML)</i> ; moist; fine sand; iron oxide-stained laminations.	3.8					
5		- Coarse, subangular gravel at 3.9 feet depth.	5.0					5
		Brown to olive-brown, <i>Silty Sand (SM)</i> ; moist to wet; fine sand.						
10								10
		Dark gray with white specks, <i>Poorly Graded Sand (SP)</i> ; wet; fine to medium sand.	13.0					
15		BOTTOM OF GEOPROBE COMPLETED 2/25/2021	15.0					15

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A5-9</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	2/25/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	2/25/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Holocene Drilling
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Asphalt slab.	0.3					
		Olive-brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist.			0			
		- 2-inch layer of iron oxide and asphalt at 3.8 feet depth.						
5		Gray Silt to <i>Lean Clay (ML/CL)</i> ; wet; blocky; gravel at 5 feet depth.	5.0			During Drilling ∇		5
		Olive-brown, <i>Silty Sand (SM)</i> ; wet; fine sand; trace wood organics; iron oxide staining.	8.0		0			
10		Dark gray with white specks; <i>Poorly Graded Sand (SP)</i> ; wet; fine to medium sand.	10.0		0			10
15		BOTTOM OF GEOPROBE COMPLETED 2/25/2021	15.0					15

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A5-10</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

LOG OF GEOPROBE

Date Started	2/25/21	Location	8801 East Marginal Way S., Tukwila, WA 98108	Ground Elevation:	Approx. 13.0 feet
Date Completed	2/25/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Holocene Drilling	Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Concrete slab.						
		Brown to dark brown, <i>Poorly Graded Sand (SP)</i> ; dry to moist; fine to coarse sand; trace fine subrounded gravel.	1.0		0			
		Black, <i>Clayey Sand (SC)</i> ; wet; fine to medium sand.	7.5		0			
		- Wood organics at 7.9 feet depth.	8.2			During Drilling √		
		Olive, <i>Lean Clay (CL)</i> ; wet; trace fine sand.						
		Black, <i>Clayey Sand (SC)</i> ; wet.	11.5					
		Olive <i>Silt with Sand (ML)</i> ; wet; fine sand; homogeneous.	12.5		0			
		BOTTOM OF GEOPROBE COMPLETED 2/25/2021	15.0					

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
LOG OF GEOPROBE A7-1	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.

GEOPROBE WELL 21-12567.GPJ 21-20447.GPJ 9/27/22 Log: CTC Rev: JXS Typ: LKN

LOG OF GEOPROBE

Date Started	2/25/21	Location	8801 East Marginal Way S., Tukwila, WA 98108
Date Completed	2/25/21	Ground Elevation:	Approx. 13.0 feet
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Holocene Drilling
		Hole Diameter:	2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Concrete slab.						
		Brown, Poorly Graded Sand with Silt (SP-SM); moist; fine to medium sand; homogeneous.	0.6	●●●●				
5		Olive-brown, Silty Sand (SM); moist; silt laminations; fine sand.	4.6	●●●●	0			5
		Gray Silt with Sand (ML); wet; fine sand; sheen; petroleum odor.	8.1	●●●●	260.3	∇		
10		Dark gray, Poorly Graded Sand with Silt (SP-SM); wet; fine to medium sand.	13.7	●●●●	40.9			10
15		BOTTOM OF GEOPROBE COMPLETED 2/25/2021	15.0	●●●●				15

Typ: LKN
 Rev: JXS
 Log: CTC
 GEOPROBE WELL: 21-12567.GPJ 21-20447.GPJ 9/27/22

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Remedial Excavations 8801 East Marginal Way S Tukwila, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE A8-1</h2>	
October 2022	21-1-12567-030
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG.



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-1A

Consulting Firm Farnon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Quaid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner Centerpoint Real Estate

Well Street Address 3901 E. Marginal Way S.

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards Flush monument

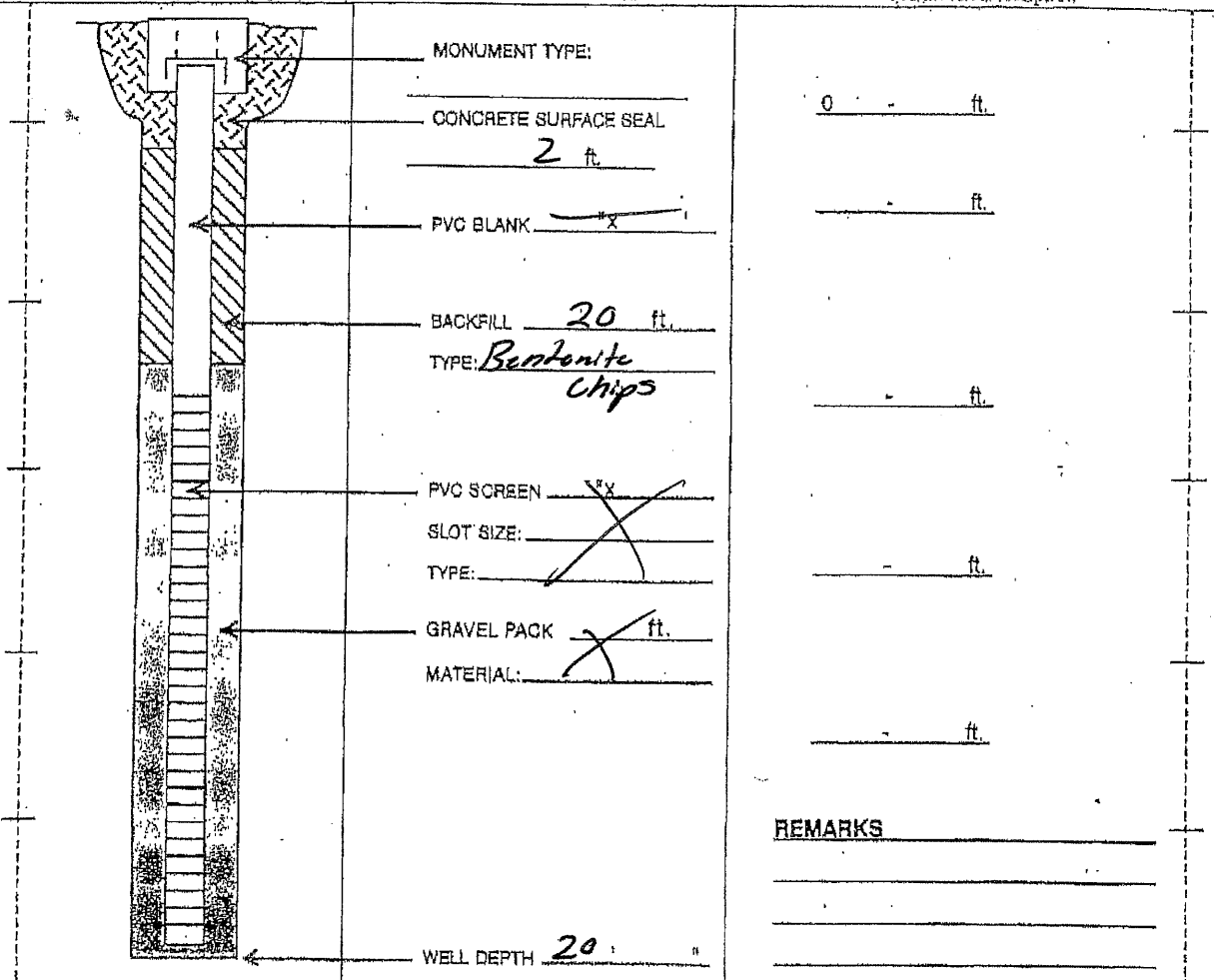
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-6ACR

Consulting Firm Farnon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner GENERAL DONT 2801 MARGINAL

Well Street Address 2801 E. MARGINAL WAY S

City TUWAINA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$, SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Leotis, Benoid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

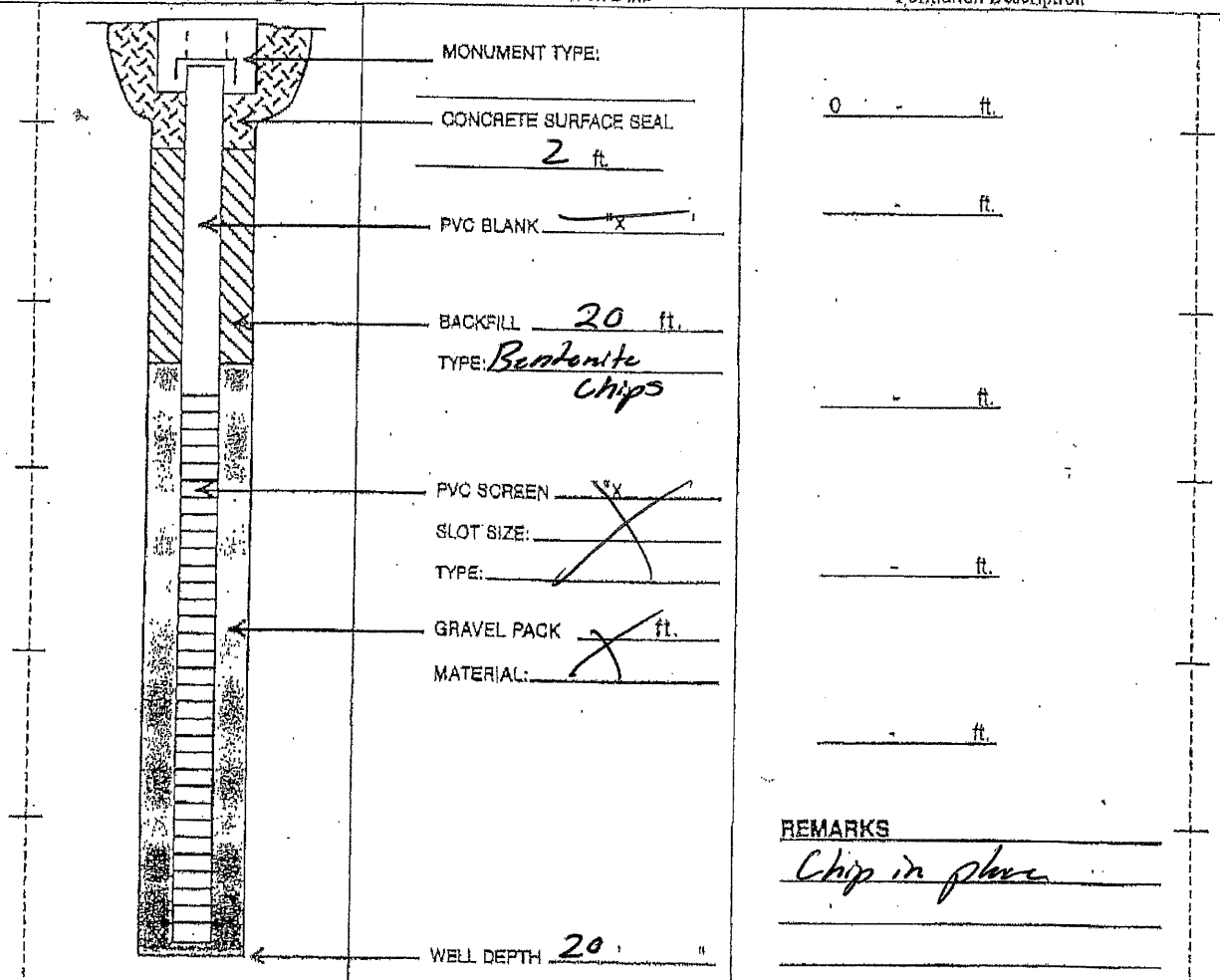
If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design

Well Data

Formation Description



REMARKS

Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-7A

Consulting Firm Furman

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Bennid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner CENTRAL POINT 8701 MAGNOLIA

Well Street Address 8801 E. MAGNOLIA WAY S

City TAKOMA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	0 _____ ft.
	CONCRETE SURFACE SEAL _____	_____ ft.
	<u>2</u> ft.	
	PVC BLANK <input checked="" type="checkbox"/>	
	BACKFILL <u>20</u> ft.	
	TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN <input checked="" type="checkbox"/>	
	SLOT SIZE: _____	_____ ft.
	TYPE: _____	
	GRAVEL PACK <input checked="" type="checkbox"/> ft.	
	MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "	
		REMARKS _____



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission ⇒ Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-8A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- ↳ Soil- Vapor- Water-sampling

Property Owner Centerpoint 800 Marginal

Well Street Address 800 Marginal Ways

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4, SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards
- Flush monument

↳ Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller
- Trainee
- Engineer

Name (Print Last, First Name) Curtis, Benid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	0 - ft.
	CONCRETE SURFACE SEAL <u>2</u> ft.	_____ ft.
	PVC BLANK <u>X</u>	_____ ft.
	BACKFILL <u>20</u> ft. TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN <u>X</u> SLOT SIZE: _____ TYPE: _____	_____ ft.
	GRAVEL PACK <u>X</u> ft. MATERIAL: _____	_____ ft.
WELL DEPTH <u>20</u> ft.		
REMARKS _____		



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission ⇒ Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-8B

Consulting Firm Farnon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Quaid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____

Soil- Vapor- Water-sampling

Property Owner Centerpoint 8801 Marginal

Well Street Address 8801 Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE ¼-¼ SE ¼, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

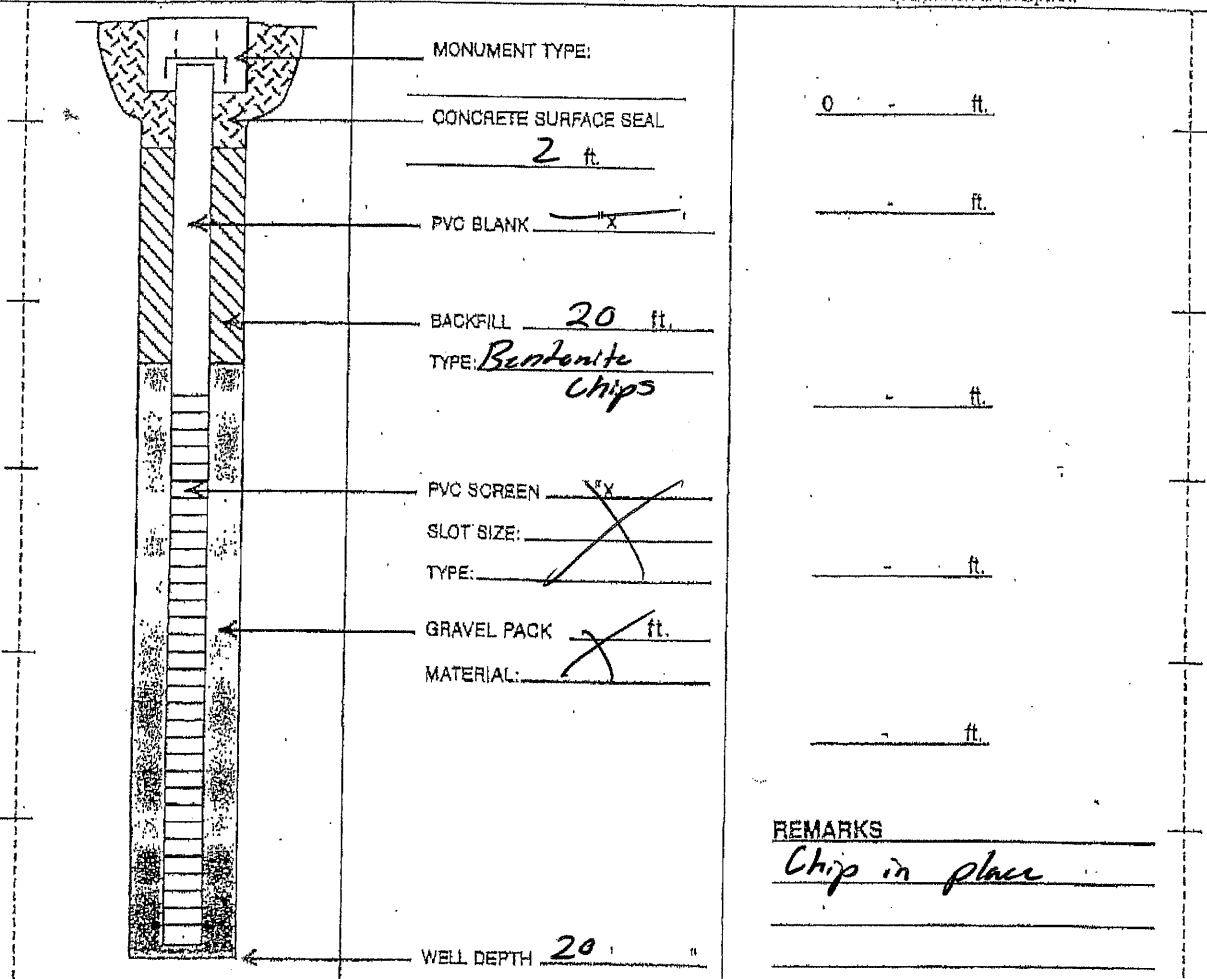
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



0 - ft.

- ft.

- ft.

- ft.

- ft.

REMARKS

Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-9A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner Centerpoint 880 Marginal

Well Street Address 3701 E Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Donald

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____ CONCRETE SURFACE SEAL <u>2</u> ft. PVC BLANK <input checked="" type="checkbox"/> BACKFILL <u>20</u> ft. TYPE: <u>Bentonite chips</u> PVC SCREEN <input checked="" type="checkbox"/> SLOT SIZE: _____ TYPE: _____ GRAVEL PACK <input checked="" type="checkbox"/> ft. MATERIAL: _____ WELL DEPTH <u>20</u> "	0 - ft. - ft. - ft. - ft. - ft.
		REMARKS



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name NW-10

Consulting Firm Furnon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Quaid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner Comercede 8001 Marginal

Well Street Address 801 E. Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

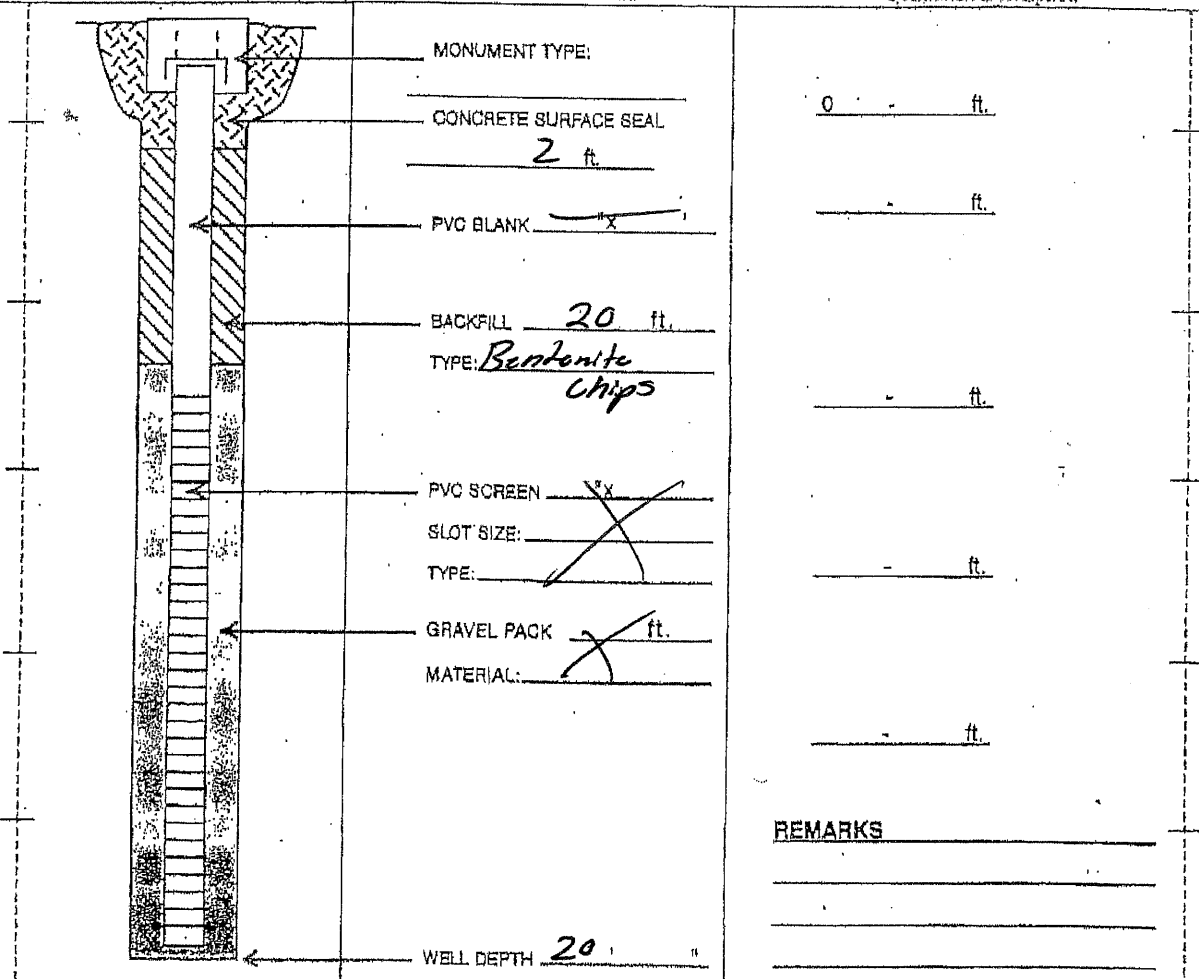
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-11A

Consulting Firm Farlon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Beniel

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner Centerpoint 8801 Marginal

Well Street Address 8801 E. Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description

	MONUMENT TYPE:	_____	_____ ft.
	CONCRETE SURFACE SEAL	<u>2</u> ft.	_____ ft.
	PVC BLANK	<u>X</u>	_____ ft.
	BACKFILL	<u>20</u> ft.	_____ ft.
	TYPE:	<u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN	<u>X</u>	_____ ft.
	SLOT SIZE:	_____	_____ ft.
TYPE:	_____	_____ ft.	
GRAVEL PACK	<u>X</u> ft.	_____ ft.	
MATERIAL:	_____	_____ ft.	
WELL DEPTH <u>20</u> "			
REMARKS			



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-12A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner Centerpoint - 8801 Marginal Way S

Well Street Address 8801 E. Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$ SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, David

Driller/Engineer/Trainee Signature _____

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design

Well Data

Formation Description

	MONUMENT TYPE:	_____	0 _____ ft.
	CONCRETE SURFACE SEAL	<u>2 ft.</u>	_____ ft.
	PVC BLANK	<input checked="" type="checkbox"/>	_____ ft.
	BACKFILL <u>20 ft.</u>	TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN <input checked="" type="checkbox"/>	SLOT SIZE: _____	_____ ft.
	GRAVEL PACK <u>X</u> ft.	MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "		
	REMARKS		



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-14A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Gerald

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____

Soil- Vapor- Water-sampling

Property Owner CENTERPOINT 8801 Marginal

Well Street Address 8801 E. Marginal Way S

City TUKWILA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

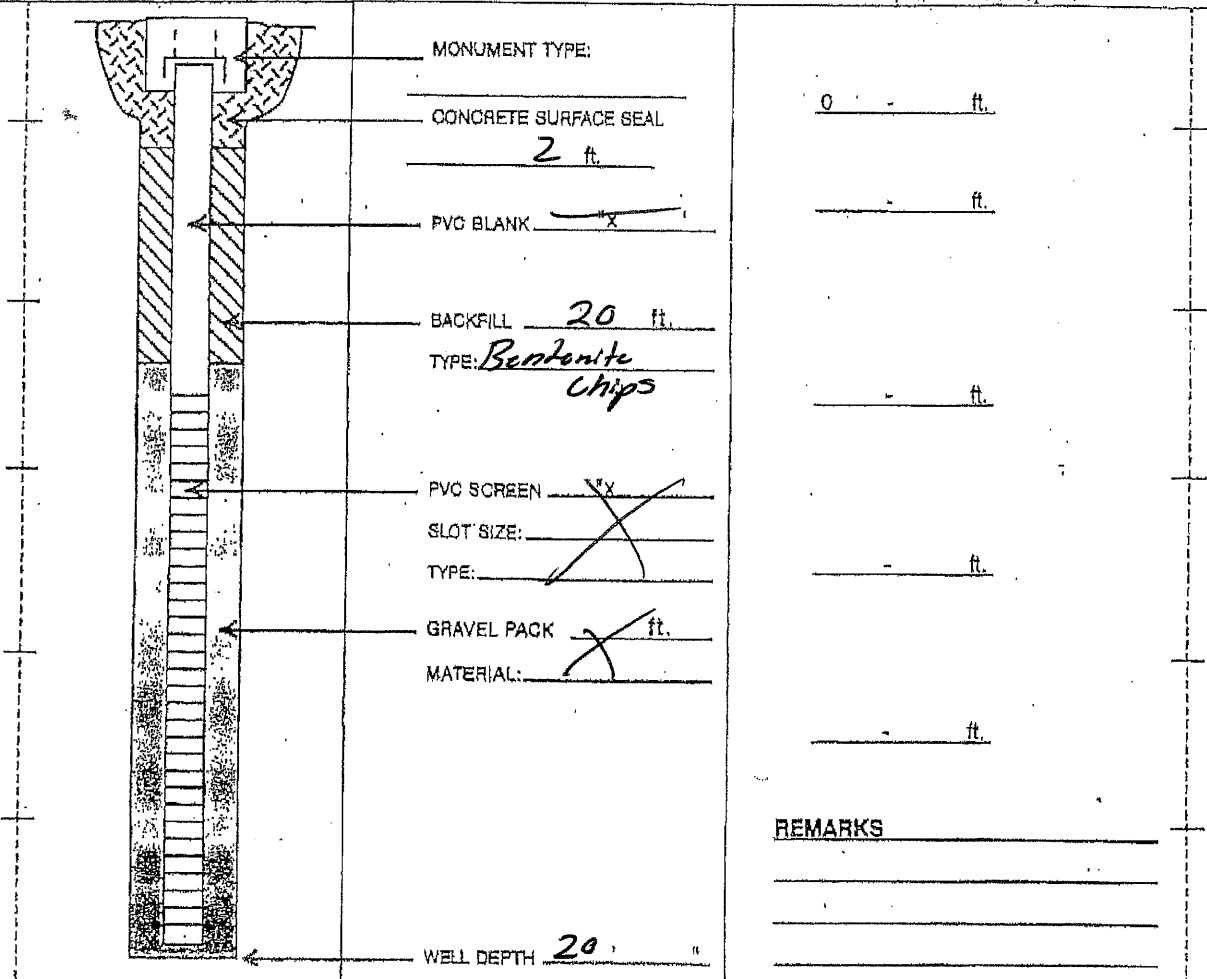
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description





Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name NW-15A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Quaid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
- Remediation Well Grounding Well
- Geotechnical Soil Boring Ground Source Heat Pump
- Environmental Boring Other _____

Soil- Vapor- Water-sampling

Property Owner, CenterPoint 800 N. Main St

Well Street Address 801 E. Main St

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$ SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

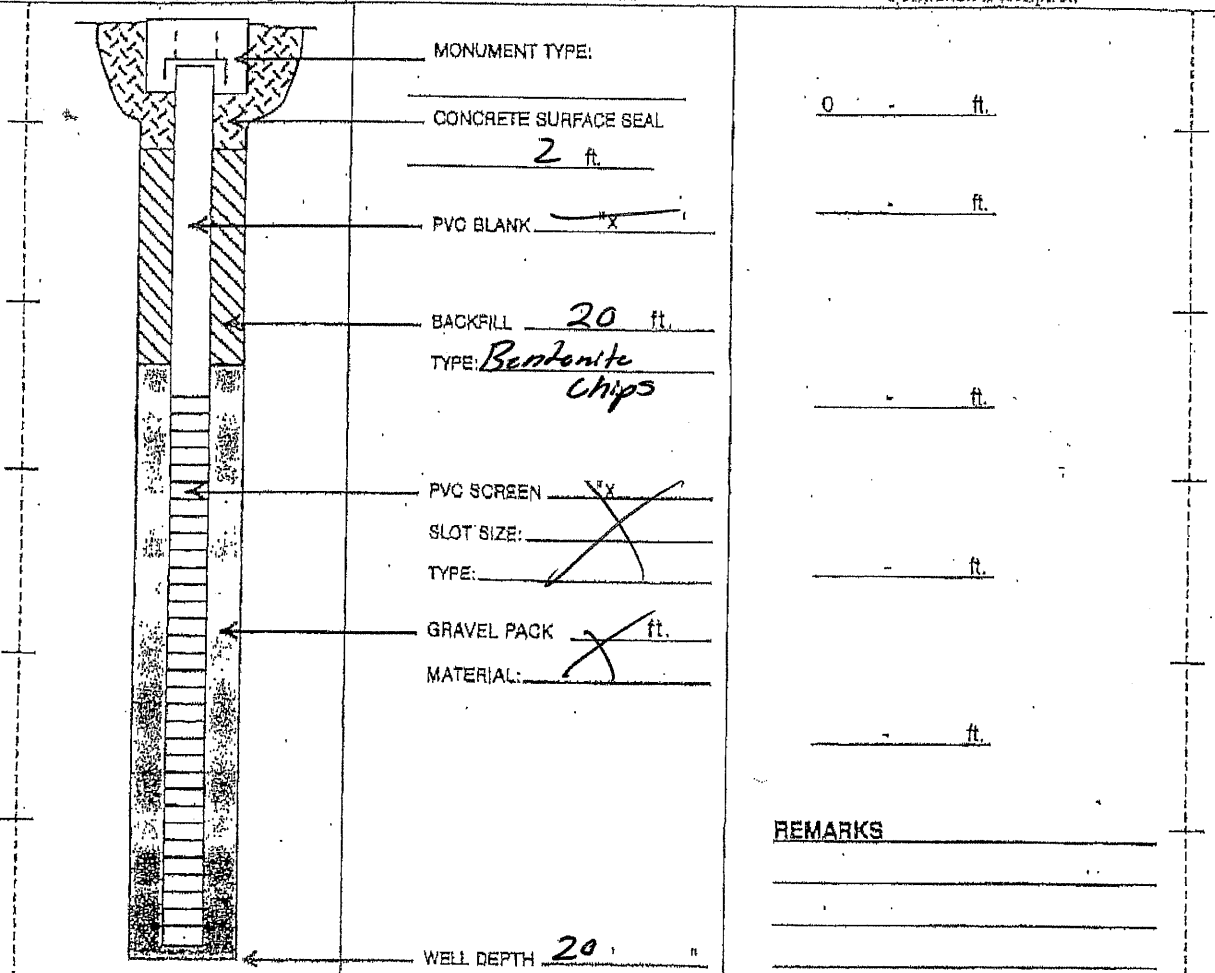
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-16A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner: Centerpoint 801 Marginal

Well Street Address: 801 E Marginal Way S

City: Fremont WA County: King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$, SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Quatis, Benid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	0 - ft.
	CONCRETE SURFACE SEAL <u>2</u> ft.	- ft.
	PVC BLANK <u>X</u>	- ft.
	BACKFILL <u>20</u> ft. TYPE: <u>Bentonite Chips</u>	- ft.
	PVC SCREEN <u>X</u> SLOT SIZE: _____ TYPE: _____	- ft.
	GRAVEL PACK <u>X</u> ft. MATERIAL: _____	- ft.
WELL DEPTH <u>20</u> "		REMARKS _____



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission ⇒ Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-18A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- ↳ Soil- Vapor- Water-sampling

Property Owner CAMPPOINT 8801 MARGINAL

Well Street Address 8801 E. MARGINAL WAYS

City IRVING County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4, SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards
- Flush monument

↳ Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller
- Trainee
- Engineer

Name (Print Last, First Name) Curtis, Daniel

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

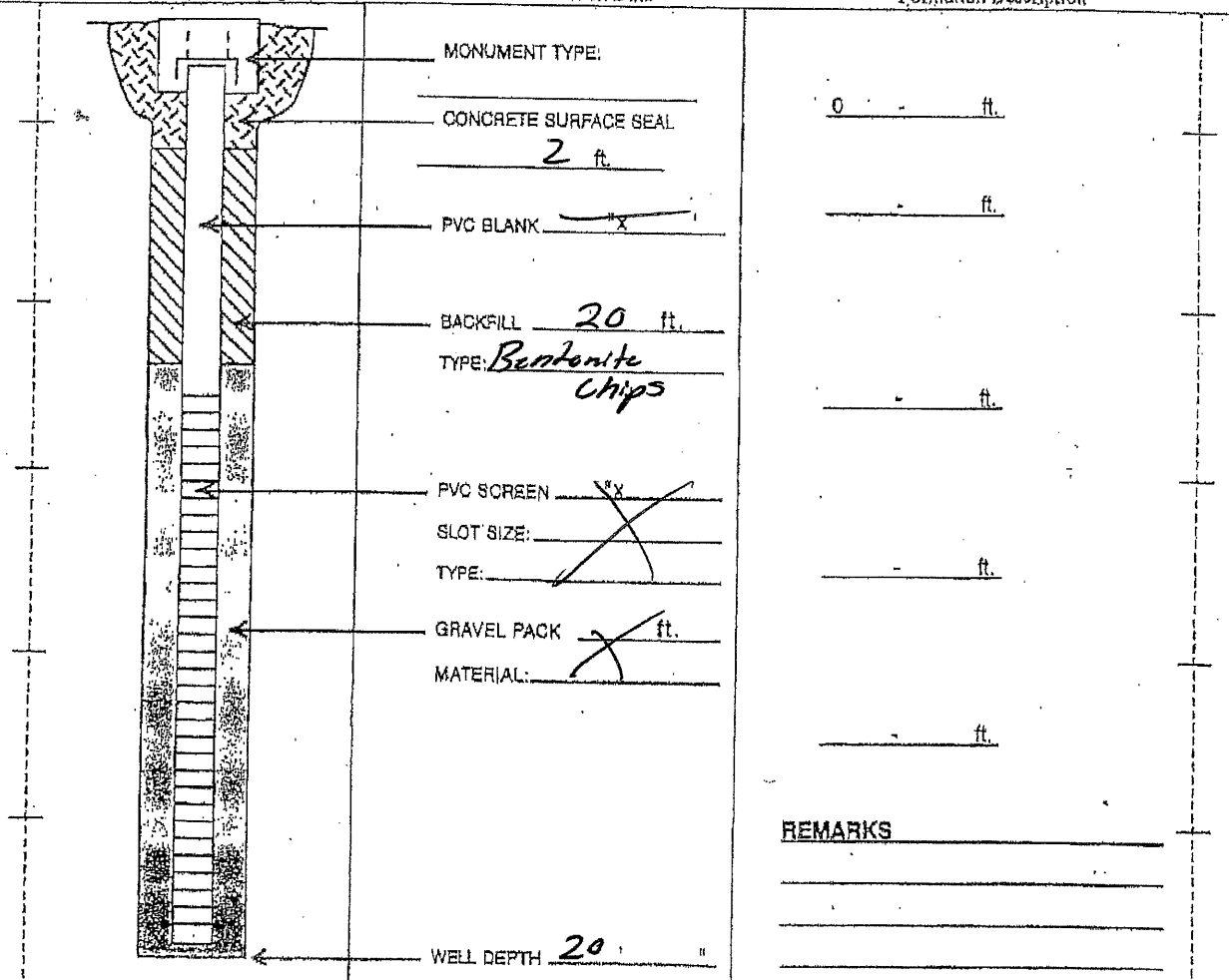
If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design

Well Data

Formation Description





Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission ⇔ Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-22A

Consulting Firm Faraba

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner, CENTROPOINT 880 MARGINAL

Well Street Address 801 E. Marginal Way S.

City TUWAINA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4, SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Benid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	_____ ft.
	CONCRETE SURFACE SEAL <u>2</u> ft.	_____ ft.
	PVC BLANK <input checked="" type="checkbox"/>	_____ ft.
	BACKFILL <u>20</u> ft. TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN <input checked="" type="checkbox"/> SLOT SIZE: _____ TYPE: _____	_____ ft.
	GRAVEL PACK <input checked="" type="checkbox"/> ft. MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "	
	REMARKS _____	



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-23

Consulting Firm Furnon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer
 Name (Print Last, First Name) Curtis, Quaid
 Driller/Engineer/Trainee Signature [Signature]
 License No. 3284
 Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner Center Point 801 Marginal

Well Street Address 801 E. Marginal Way S.

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM
SE $\frac{1}{4}$ - $\frac{1}{4}$ SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

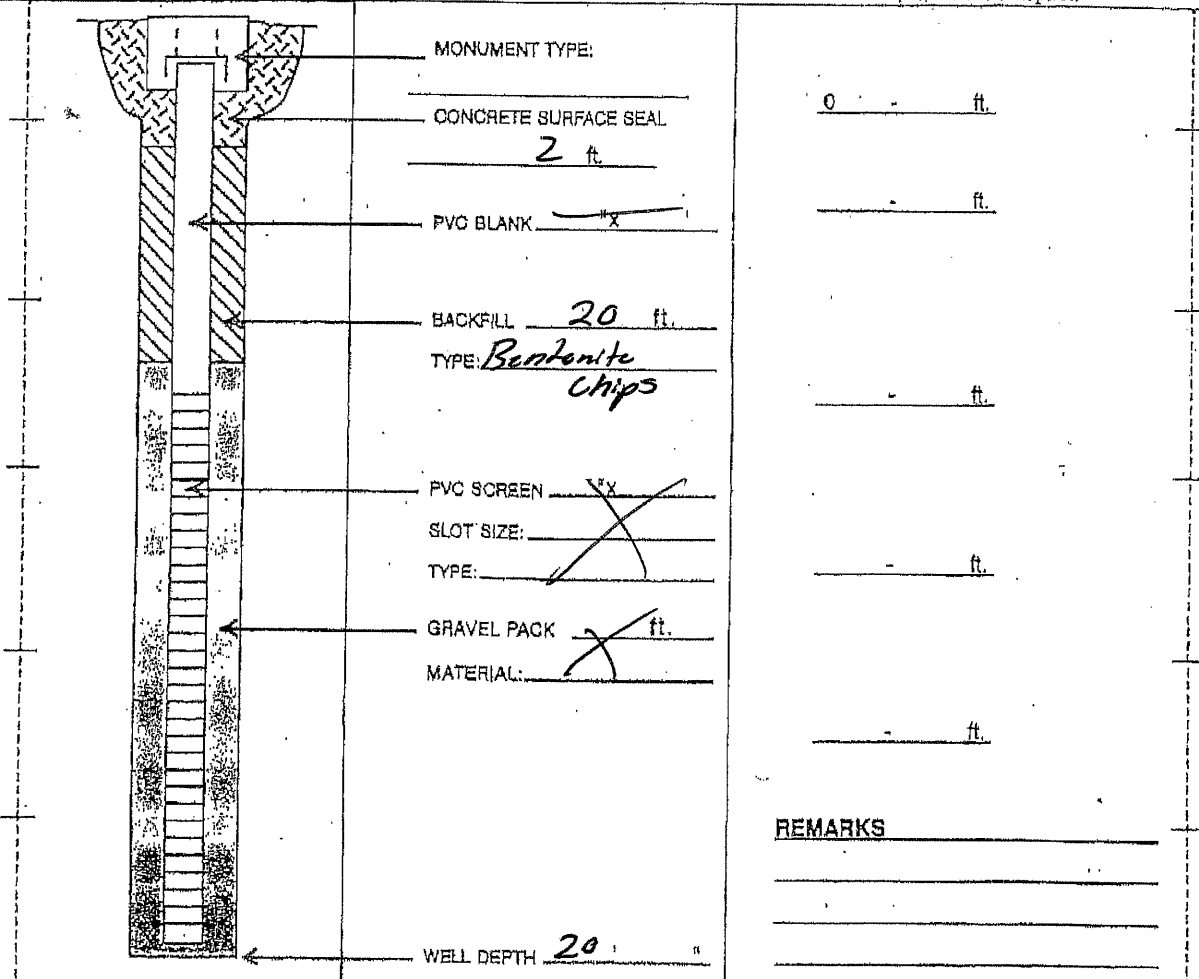
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS _____



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-24A

Consulting Firm Furutan

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner CenterPoint 8801 Marginal

Well Street Address 8801 Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$ SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Quatis, Benid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

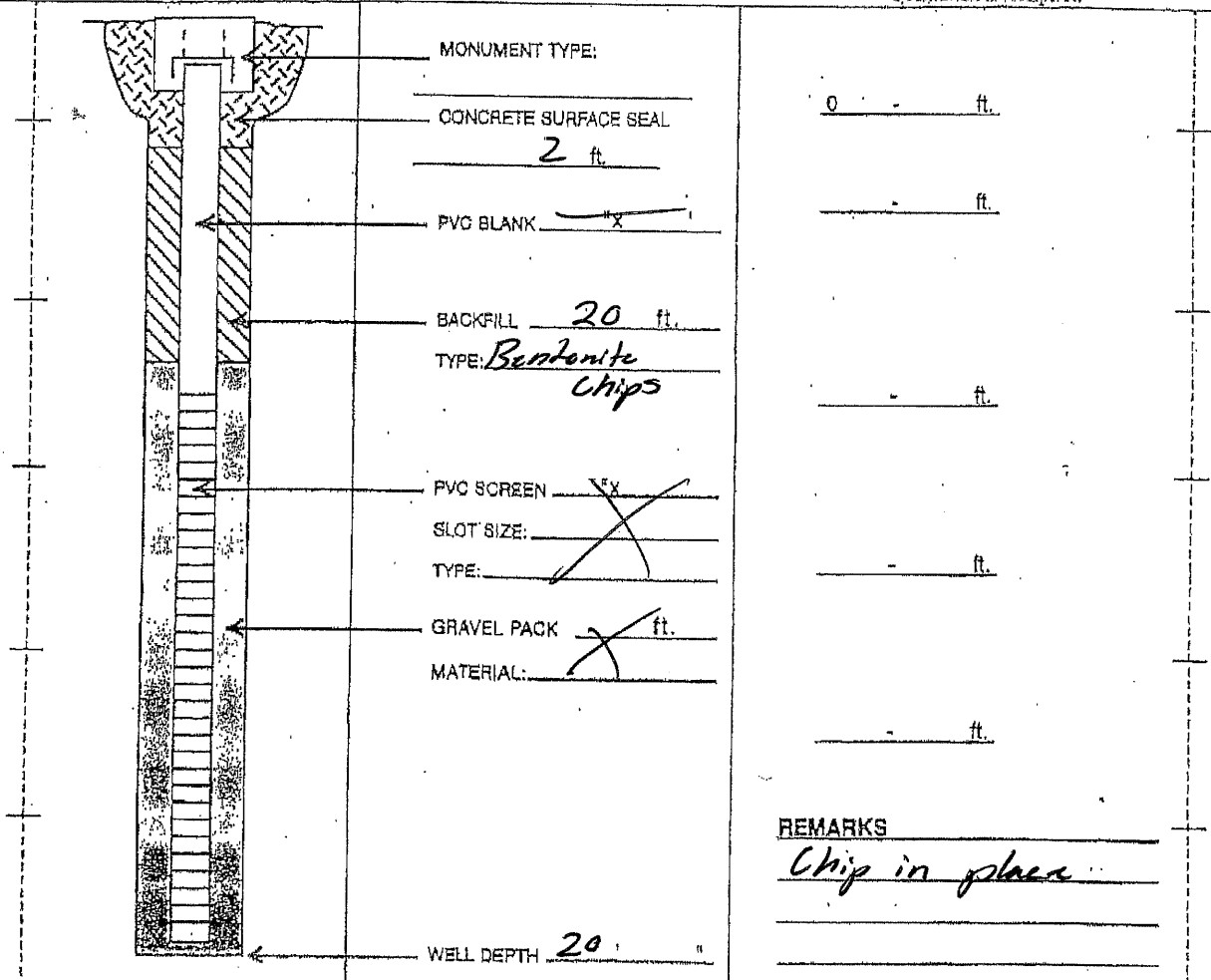
If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design

Well Data

Formation Description



REMARKS
Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-25A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
- Remediation Well
- Geotechnical Soil Boring
- Environmental Boring
- Injection Point
- Grounding Well
- Ground Source Heat Pump
- Other _____

Property Owner Central Point 8801 Marginal

Well Street Address: 7801 E Marginal Way S

City: Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$, SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, David

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

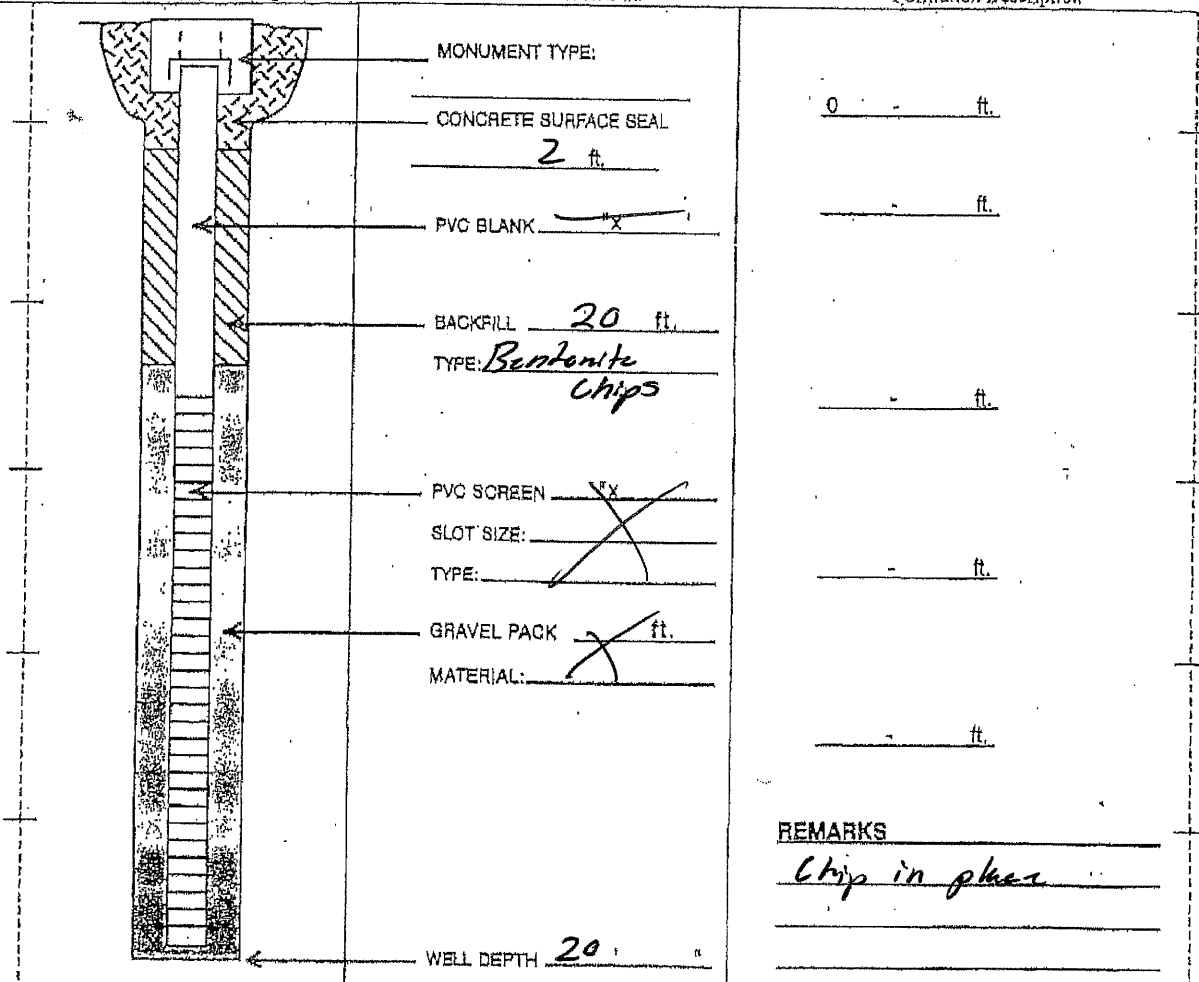
If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design

Well Data

Formation Description



REMARKS
Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-27A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Quaid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
- Remediation Well
- Geotechnical Soil Boring
- Environmental Boring
- Injection Point
- Grounding Well
- Ground Source Heat Pump
- Other _____

Soil- Vapor- Water-sampling

Property Owner Central Point 8801 Marginal

Well Street Address 7801 E. Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

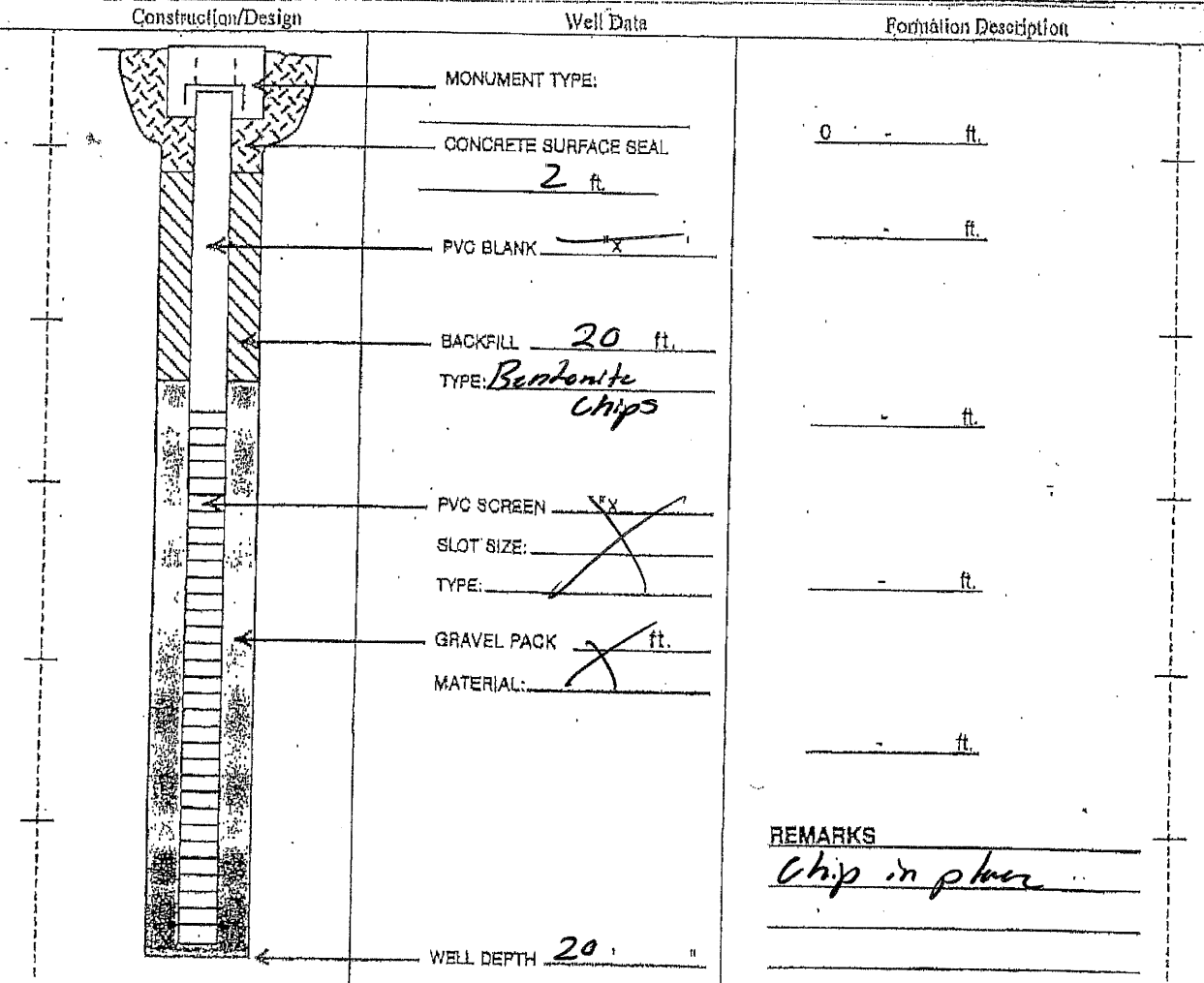
Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021





Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-28A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner CENTERPOINT 8801 MARGINAL

Well Street Address 8801 E MARGINAL WAY S

City TUKWILA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$ SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Leatis, David

Driller/Engineer/Trainee Signature _____

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE:	_____ ft.
	CONCRETE SURFACE SEAL	_____ ft.
	<u>2</u> ft.	_____ ft.
	PVC BLANK <input checked="" type="checkbox"/>	_____ ft.
	BACKFILL <u>20</u> ft.	_____ ft.
	TYPE: <u>Bentonite Chips</u>	_____ ft.
PVC SCREEN <input checked="" type="checkbox"/>	SLOT SIZE: _____	_____ ft.
TYPE: _____	GRAVEL PACK _____ ft.	_____ ft.
GRAVEL PACK <input checked="" type="checkbox"/>	MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "	
REMARKS <u>Chip in place</u>		



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-28B

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner CenterPoint 8801 Montgomery

Well Street Address 8801 E Montgomery Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Ronald

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	0 _____ ft.
	CONCRETE SURFACE SEAL <u>2</u> ft.	_____ ft.
	PVC BLANK <input checked="" type="checkbox"/>	_____ ft.
	BACKFILL <u>20</u> ft. TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN <input checked="" type="checkbox"/> SLOT SIZE: _____ TYPE: _____	_____ ft.
	GRAVEL PACK <u>X</u> ft. MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "	
	REMARKS <u>Chip in place</u>	

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission ⇨ Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name _____

Consulting Firm _____

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller Trainee Engineer

Name (Print Last, First Name) _____

Driller/Engineer/Trainee Signature _____

License No. _____

Company Name _____

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. _____

Type of Well:

- | | |
|---|--|
| <input type="checkbox"/> Resource Protection Well | <input type="checkbox"/> Injection Point |
| <input type="checkbox"/> Remediation Well | <input type="checkbox"/> Grounding Well |
| <input type="checkbox"/> Geotechnical Soil Boring | <input type="checkbox"/> Ground Source Heat Pump |
| <input type="checkbox"/> Environmental Boring | <input type="checkbox"/> Other _____ |
- ↳ Soil- Vapor- Water-sampling

Property Owner _____

Well Street Address _____

City _____ County _____

Tax Parcel No. _____

Location (see instructions): WWM or EWM

_____ 1/4-1/4 _____ 1/4, Section _____ Town _____ Range _____

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter _____ inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards Flush monument

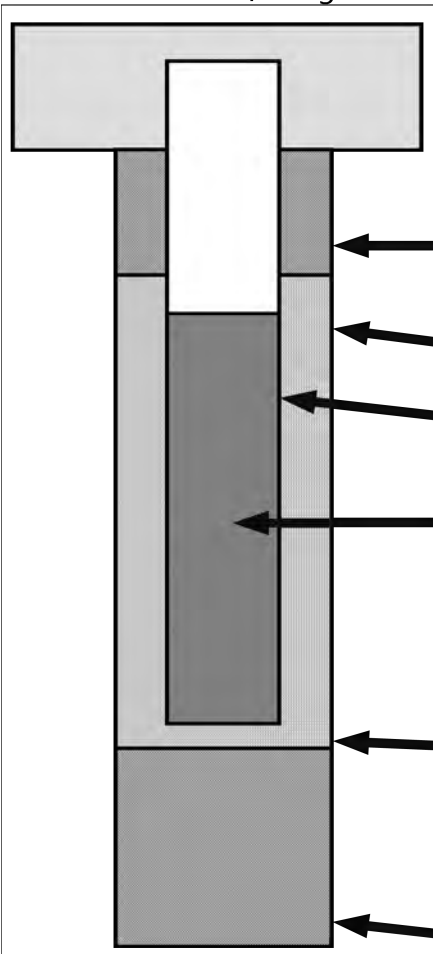
↳ Stick-up of top of well casing _____ ft above ground surface

Start Date _____ Completed Date _____

Construction/Design

Well Data

Formation Description

	Concrete Surface Seal	_____ FT	_____ FT
	Depth	_____ FT	
	Blank Casing (dia x dep)	_____	
	Material	_____	
	Backfill	_____ FT	
	Type	_____	_____ FT
	Seal	_____ FT	
	Gravel Pack	_____ FT	
	Material	_____	
	Screen (dia x dep)	_____	_____ FT
Slot Size	_____		
Material	_____		
Well Depth	_____ FT		
Backfill	_____		
Material	_____		
Total Hole Depth	_____ FT		

**Space Reserved
for Ecology Stamp
of Receipt**



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-31A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, David

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____

Soil- Vapor- Water- Monitoring

Property Owner Centerpoint 801 Marginal

Well Street Address 801 E Marginal Way

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

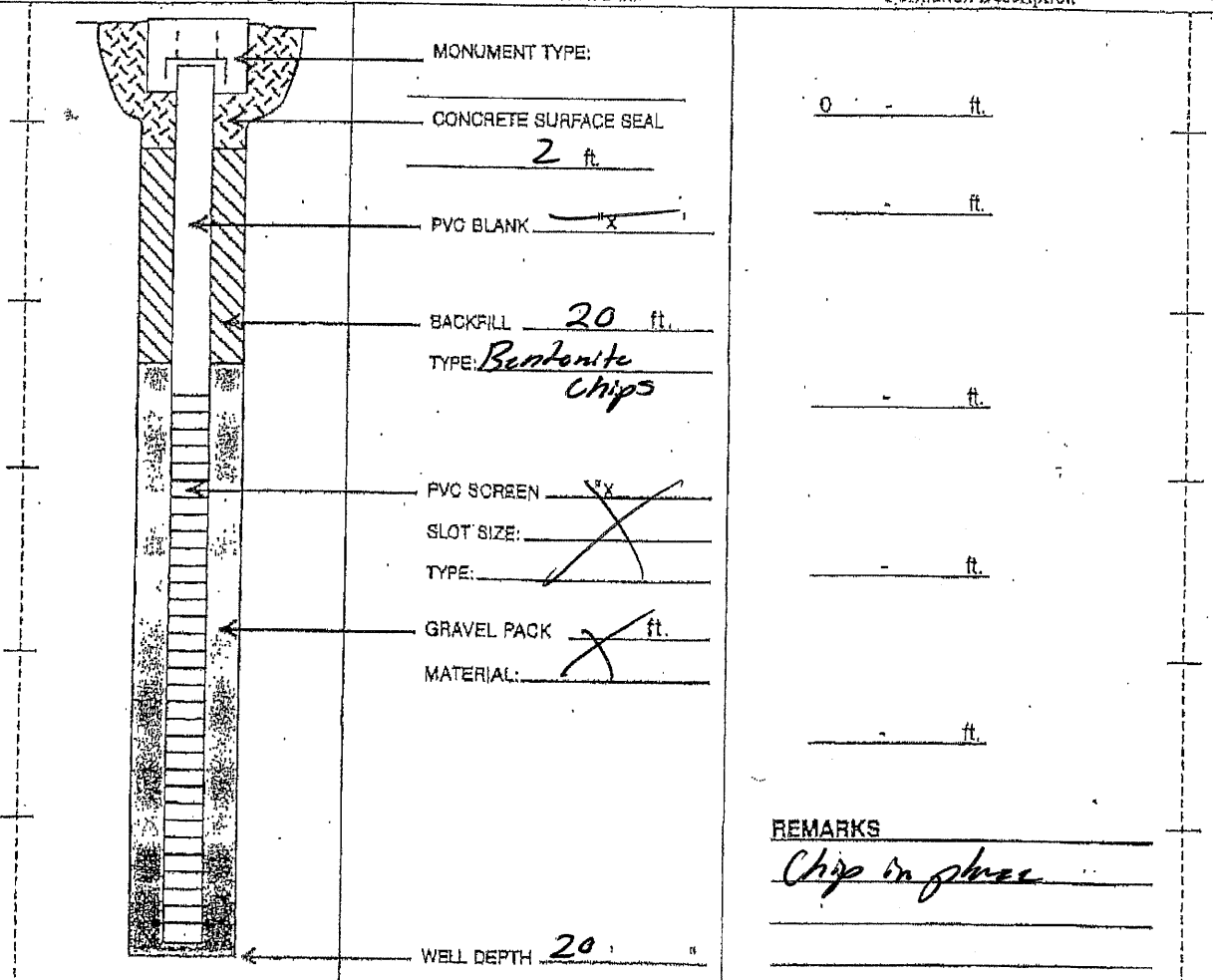
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS
Chip on place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-32A

Consulting Firm Furman

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller Trainee Engineer

Name (Print Last, First Name) Quatis, Bennid

Driller/Engineer/Trainee Signature _____

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner CENTROPOINT FOOD MARKETING

Well Street Address 701 E MARGINAL WAYS

City TUKWILHA County King

Tax Parcel No. _____

Location (see instructions): _____ WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards Flush monument

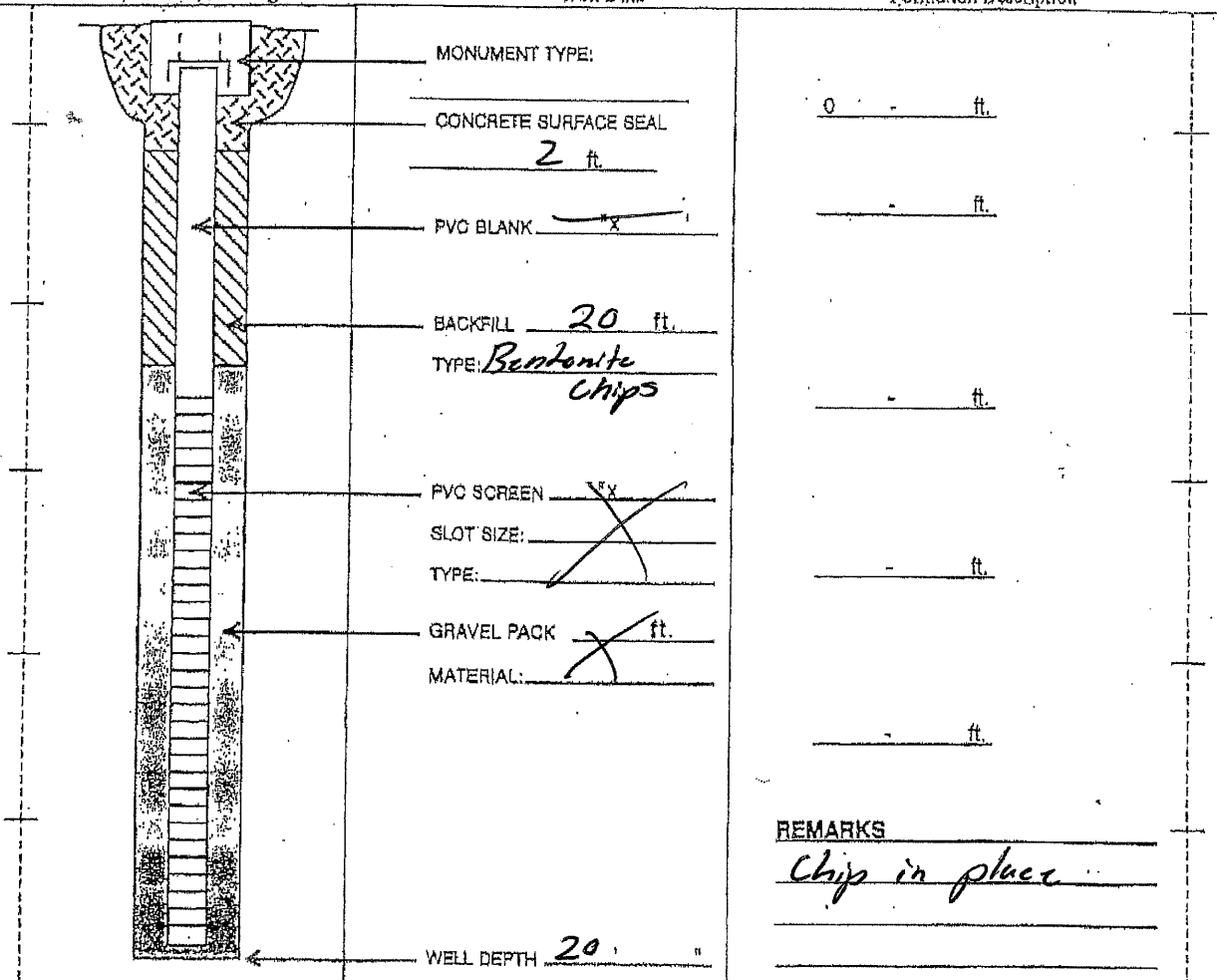
\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description





Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission ⇒ Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-33A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- ↳ Soil- Vapor- Water-sampling

Property Owner CENTERPOINT 8601 MARGINAL

Well Street Address 3301 E MARGINAL WAY S

City TAKOMA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4, SE 1/4, Section 33, Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

↳ Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Benard

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

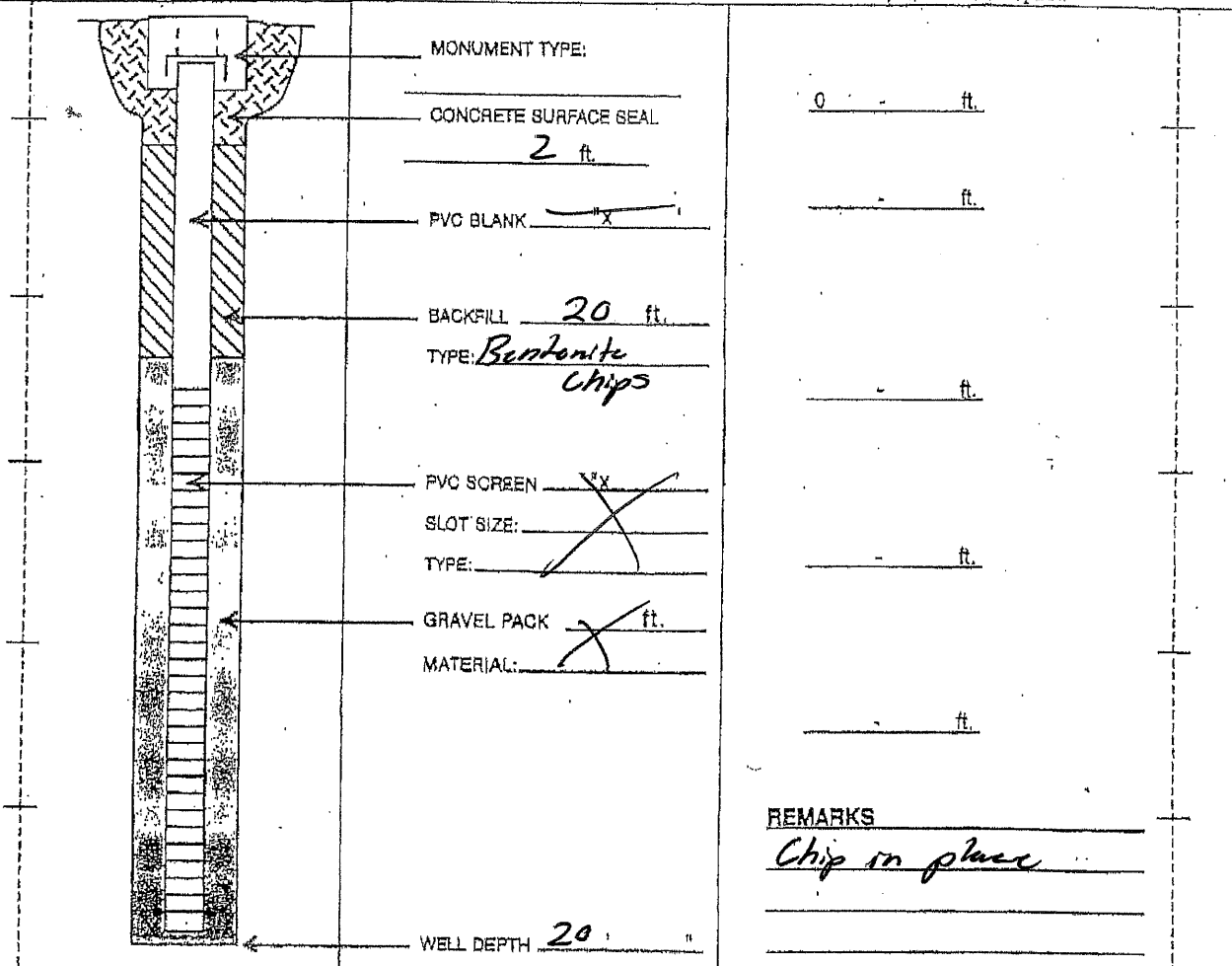
If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design

Well Data

Formation Description



REMARKS
Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-34A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- Soil- Vapor- Water-sampling

Property Owner, CENTRAPOINT 8801 N. NARVAH WAY

Well Street Address 8801 E. NARVAH WAY S.

City TUKWILA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Leotis, Quaid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	0 - ft.
	CONCRETE SURFACE SEAL <u>2</u> ft.	- ft.
	PVC BLANK <input checked="" type="checkbox"/>	- ft.
	BACKFILL <u>20</u> ft. TYPE: <u>Bentonite chips</u>	- ft.
	PVC SCREEN <input checked="" type="checkbox"/> SLOT SIZE: _____ TYPE: _____	- ft.
	GRAVEL PACK <input checked="" type="checkbox"/> ft. MATERIAL: _____	- ft.
	WELL DEPTH <u>20</u> "	
	REMARKS <u>Chip in place</u>	



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-38A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water sampling

Property Owner Center Point 8701 Marginal Way

Well Street Address 8801 E. Marginal Way

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, David

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	0 _____ ft.
	CONCRETE SURFACE SEAL <u>2</u> ft.	_____ ft.
	PVC BLANK <input checked="" type="checkbox"/>	_____ ft.
	BACKFILL <u>20</u> ft. TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN <input checked="" type="checkbox"/> SLOT SIZE: _____ TYPE: _____	_____ ft.
	GRAVEL PACK _____ ft. MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "	
	REMARKS <u>Chip in place</u>	



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-39A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Benid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 - Remediation Well Grounding Well
 - Geotechnical Soil Boring Ground Source Heat Pump
 - Environmental Boring Other _____
- Soil- Vapor- Water-sampling

Property Owner, Centerpoint 8801 Marginal

Well Street Address 880 E Marginal NW S

City Ilwaco County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards Flush monument

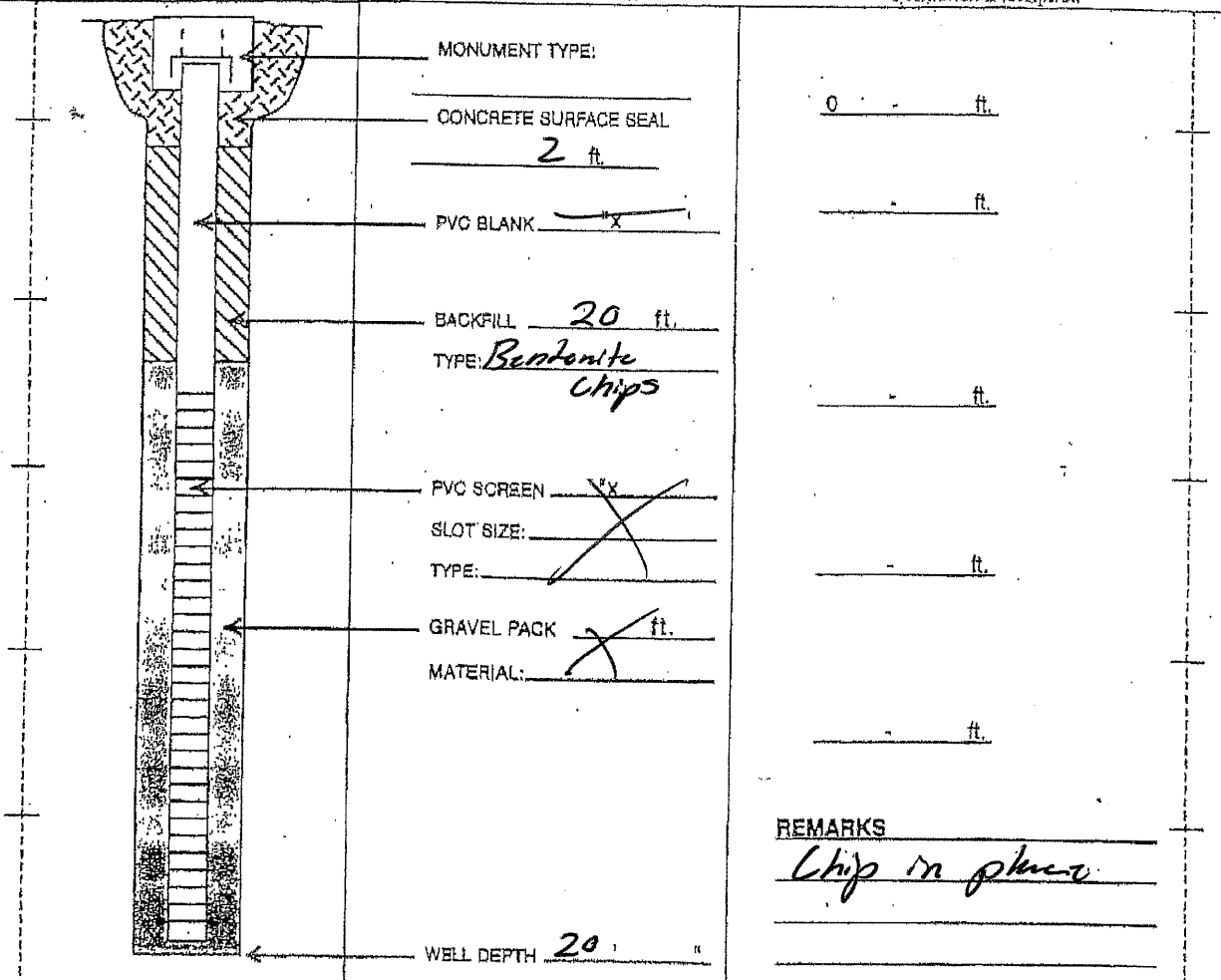
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS

Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOT No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-40A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner Centerpoint 8801 Marginal Way S

Well Street Address 8801 E. Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$, SP $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Benid

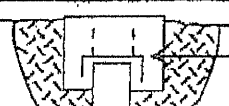
Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	_____ ft.
	CONCRETE SURFACE SEAL <u>2</u> ft.	_____ ft.
	PVC BLANK <input checked="" type="checkbox"/>	_____ ft.
	BACKFILL <u>20</u> ft. TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN <input checked="" type="checkbox"/>	_____ ft.
	SLOT SIZE: _____ TYPE: _____	_____ ft.
	GRAVEL PACK <input checked="" type="checkbox"/> ft. MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "	
REMARKS <u>Chip in place</u>		



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-40B

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Quinn

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 - Remediation Well Grounding Well
 - Geotechnical Soil Boring Ground Source Heat Pump
 - Environmental Boring Other _____
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner CENTERPOINT 8801 N. MAGNINI

Well Street Address 8801 E. MAGNINI HWY S

City TAKOMA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$ SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

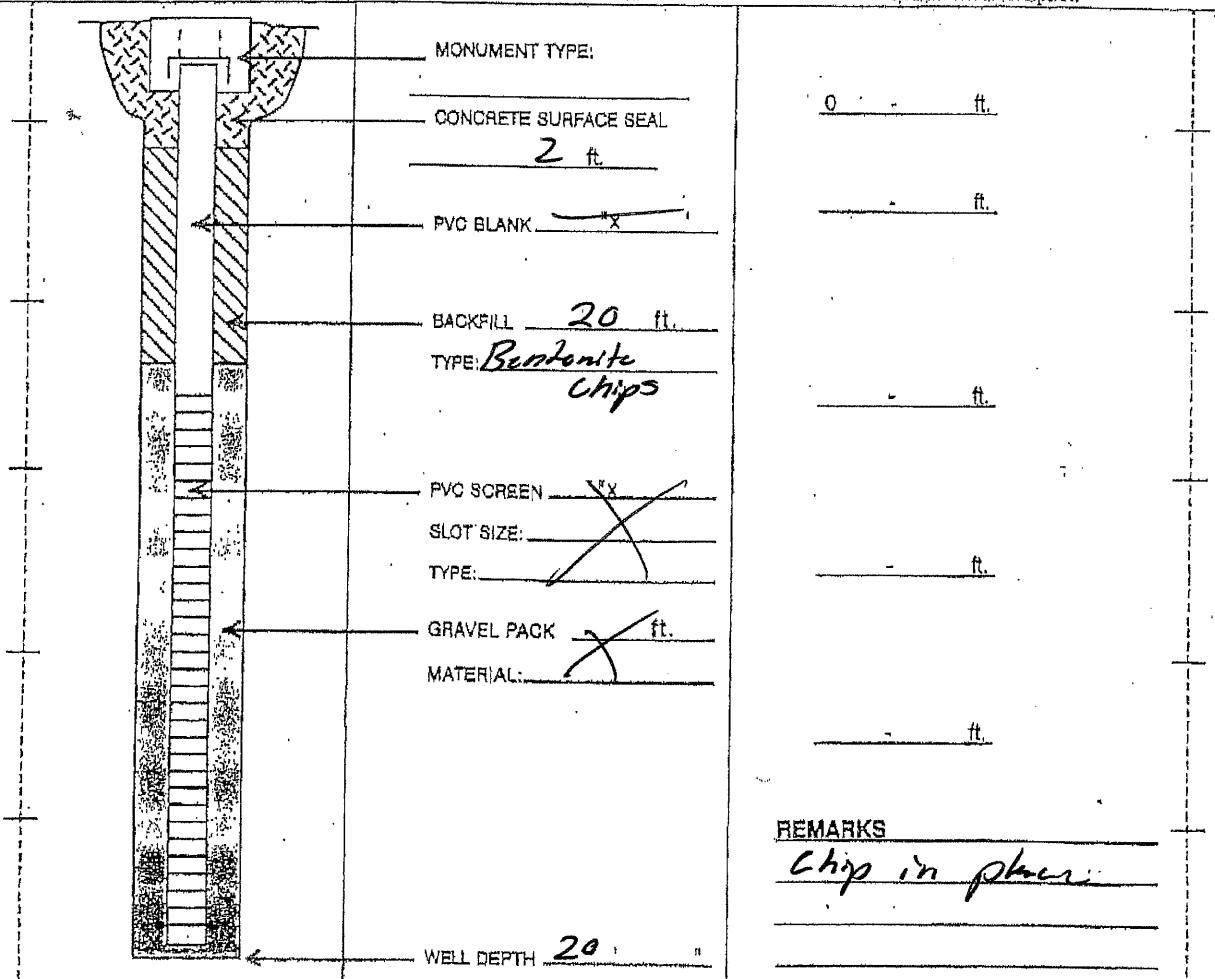
\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS

Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-41A

Consulting Firm Farallon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner Centerpoint 8801 Marginal Way S

Well Street Address 8801 E Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4, SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Quatis, Benid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	_____ ft.
	CONCRETE SURFACE SEAL <u>2</u> ft.	_____ ft.
	PVC BLANK <input checked="" type="checkbox"/>	_____ ft.
	BACKFILL <u>20</u> ft. TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN <input checked="" type="checkbox"/> SLOT SIZE: _____ TYPE: _____	_____ ft.
	GRAVEL PACK <input checked="" type="checkbox"/> ft. MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "	
		REMARKS <u>Chip in place</u>



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-42A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____

Soil- Vapor- Water-sampling

Property Owner Center Point 889 Marginal

Well Street Address 301 E Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$, SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Leatis, Benid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

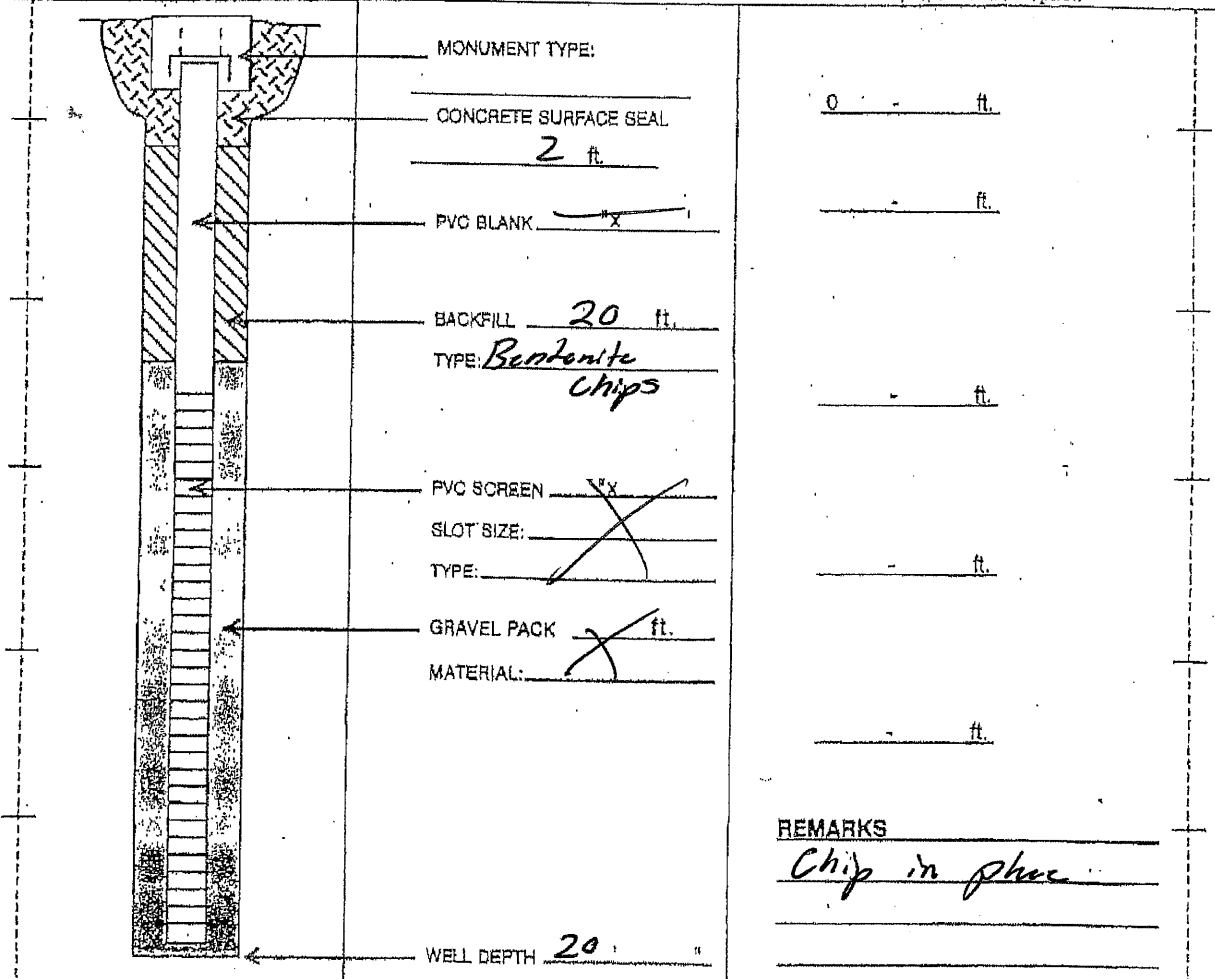
If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design

Well Data

Formation Description





Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-43A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Beniel

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner CORNER POINT 800 MARGINAL

Well Street Address 8801 S MARGINAL WAYS

City TUKWILA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4, SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description

	MONUMENT TYPE:	
	CONCRETE SURFACE SEAL	0 ft.
	_____ 2 ft.	
	PVC BLANK _____	_____ ft.
	BACKFILL <u>20</u> ft.	
	TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN _____	
SLOT SIZE: _____		
TYPE: _____	_____ ft.	
GRAVEL PACK _____ ft.		
MATERIAL: _____	_____ ft.	
WELL DEPTH <u>20</u> "		

REMARKS

Chip in place

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission ⇒ Original NOI No. RE06247

Ecology Well ID Tag No. AAF-900

Site Well Name MW-44A

Consulting Firm AEC

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Wright, John

Driller/Engineer/Trainee Signature John Wright

License No. 3356

Company Name Anderson Environmental Contracting LLC

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE77221

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 ↳ Soil- Vapor- Water-sampling

Property Owner CENTERPOINT 8801 MARGINAL

Well Street Address 8801 E MARGINAL WAY S

City TUKWILA County KING

Tax Parcel No. 542260-0060

Location (see instructions): _____ WWM or EWM

NW 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

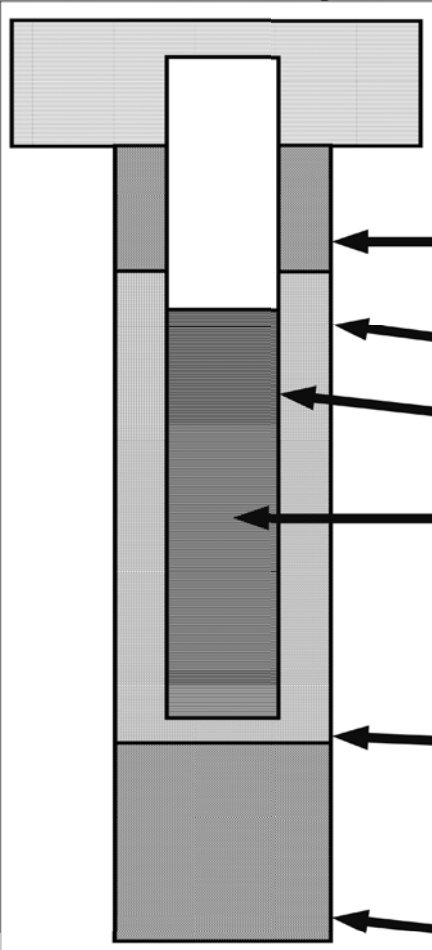
Borehole diameter 8.25 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

↳ Stick-up of top of well casing _____ ft above ground surface

Start Date 03/07/2023 Completed Date 03/07/2023

Construction/Design	Well Data	Formation Description
	Concrete Surface Seal Depth _____ FT	_____ FT
	Blank Casing (dia x dep) _____	CHIP IN PLACE
	Material CHIPS	
	Backfill <u>25</u> FT	
	Type _____	_____ FT
	Seal _____	_____ FT
	Gravel Pack _____	_____ FT
	Material _____	
	Screen (dia x dep) _____	_____ FT
	Slot Size _____	
Material _____		
Well Depth <u>15</u> FT		
Backfill _____		
Material _____		
Total Hole Depth <u>25</u> FT		
		Space Reserved for Ecology Stamp of Receipt



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-45A

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner Continental 880 Marginal

Well Street Address 8801 E Marginal Hwy S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$ SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Donald

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	0 _____ ft.
	CONCRETE SURFACE SEAL <u>2</u> ft.	_____ ft.
	PVC BLANK <input checked="" type="checkbox"/>	_____ ft.
	BACKFILL <u>20</u> ft. TYPE: <u>Bentonite Chips</u>	_____ ft.
	PVC SCREEN <input checked="" type="checkbox"/> SLOT SIZE: _____ TYPE: _____	_____ ft.
	GRAVEL PACK <u>X</u> ft. MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "	
REMARKS		<u>Chip in place</u>



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-46A

Consulting Firm Farallon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Quinn

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner CENTER POINT 8801 N. MARGINAL

Well Street Address 8801 E. MARGINAL WAY S

City TAKOMA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards Flush monument

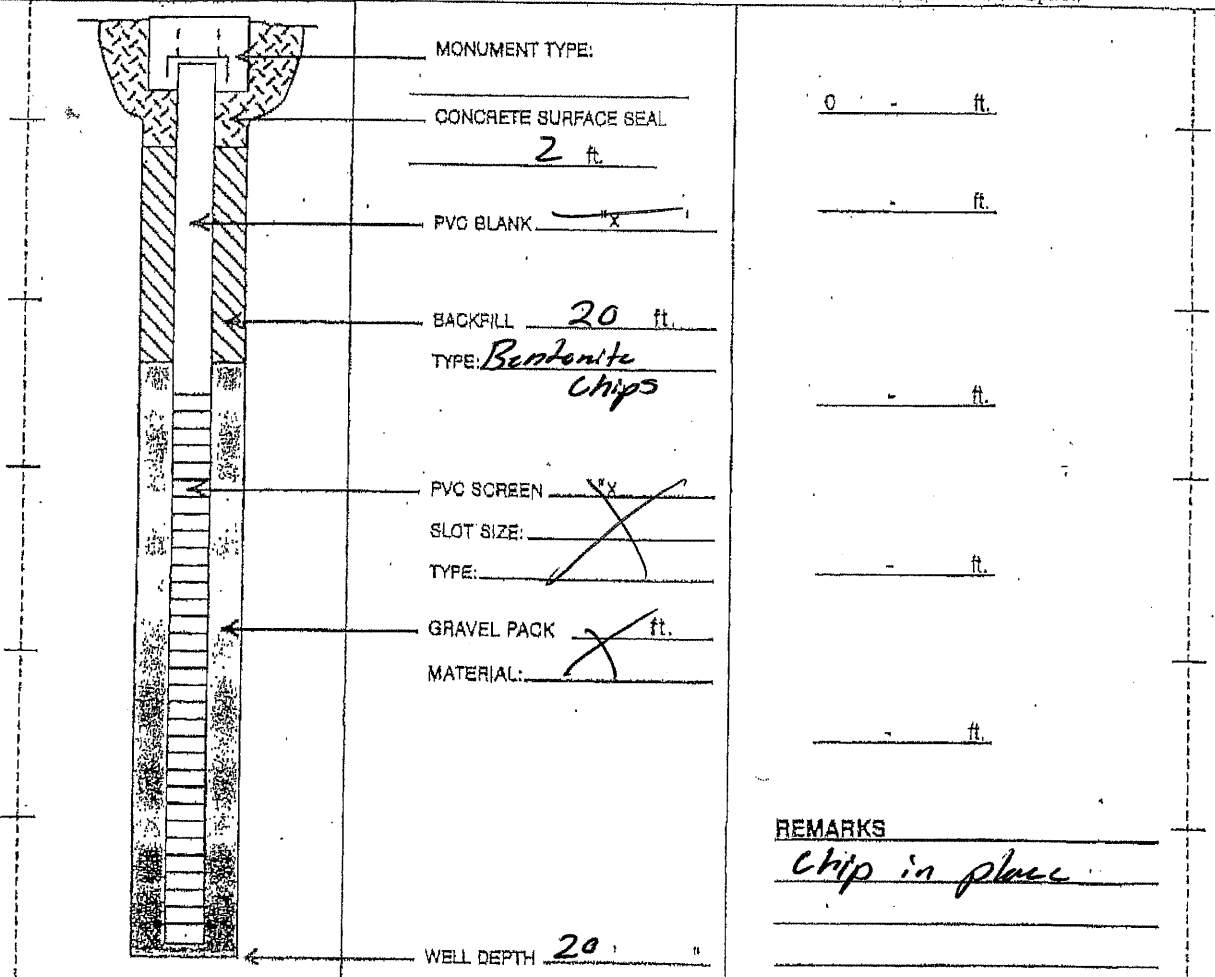
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS

chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-47A

Consulting Firm Farlan

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well
 - Remediation Well
 - Geotechnical Soil Boring
 - Environmental Boring
 - Injection Point
 - Grounding Well
 - Ground Source Heat Pump
 - Other _____
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner CENTER POINT 8801 Marginal Hwy S

Well Street Address 8801 E Marginal Hwy S

City TUKWILA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$ SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Quatis, Quaid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____	_____ ft.
	CONCRETE SURFACE SEAL _____	_____ ft.
	<u>2</u> ft.	_____ ft.
	PVC BLANK <input checked="" type="checkbox"/>	_____ ft.
	BACKFILL <u>20</u> ft.	_____ ft.
	TYPE: <u>Bentonite chips</u>	_____ ft.
	PVC SCREEN <input checked="" type="checkbox"/>	_____ ft.
	SLOT SIZE: _____	_____ ft.
	TYPE: _____	_____ ft.
	GRAVEL PACK <u>X</u> ft.	_____ ft.
	MATERIAL: _____	_____ ft.
	WELL DEPTH <u>20</u> "	
	REMARKS _____	
	<u>Chip in place</u>	



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-47B

Consulting Firm Furber

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer
 Name (Print Last, First Name) Curtis, Quaid
 Driller/Engineer/Trainee Signature [Signature]
 License No. 3284
 Company Name Holt

If trainee box is checked, sponsor's license number: _____
 Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner CENTROPOINT 8801 MARGINAL

Well Street Address 8801 E. MARGINAL WAY S

City TUKWILA County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$ SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

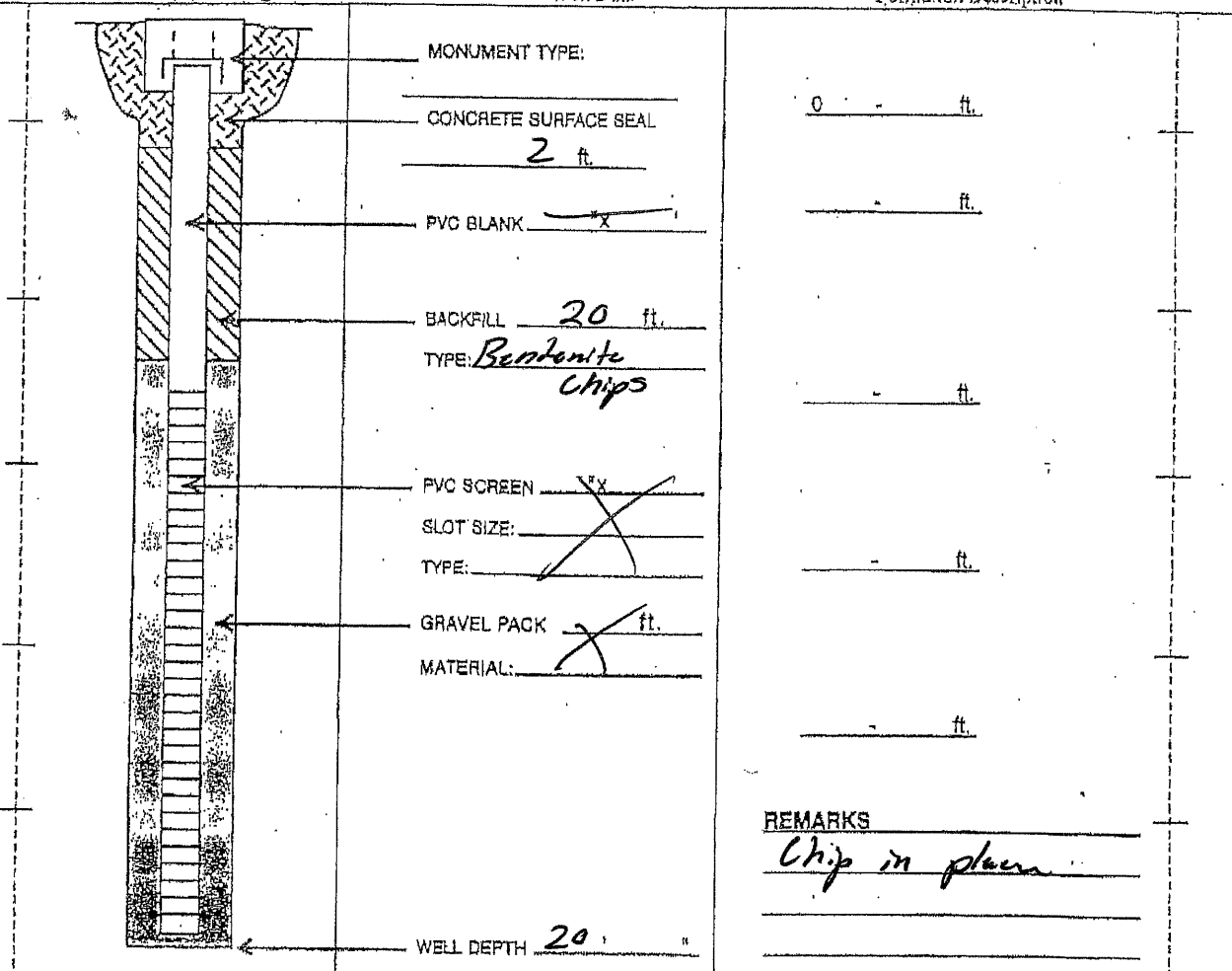
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS

Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-48A

Consulting Firm Furman

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer
 Name (Print Last, First Name) Curtis, Gerald
 Driller/Engineer/Trainee Signature [Signature]
 License No. 3284
 Company Name Holt

If trainee box is checked, sponsor's license number: _____
 Sponsor's signature _____

Notice of Intent No. AE66763

- Type of Well:
- | | |
|---|--|
| <input type="checkbox"/> Resource Protection Well | <input type="checkbox"/> Injection Point |
| <input type="checkbox"/> Remediation Well | <input type="checkbox"/> Grounding Well |
| <input type="checkbox"/> Geotechnical Soil Boring | <input type="checkbox"/> Ground Source Heat Pump |
| <input type="checkbox"/> Environmental Boring | <input type="checkbox"/> Other _____ |
- \hookrightarrow Soil- Vapor- Water-sampling

Property Owner Center Point Holdings Original

Well Street Address 801 E Marginal Way

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM
SE 1/4-1/4 SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____
 (WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: _____ CONCRETE SURFACE SEAL <u>2 ft</u> PVC BLANK <u>X</u> BACKFILL <u>20 ft</u> TYPE: <u>Bentonite Chips</u> PVC SCREEN <u>X</u> SLOT SIZE: _____ TYPE: _____ GRAVEL PACK <u>X</u> ft. MATERIAL: _____ WELL DEPTH <u>20</u> "	0 - ft. - ft. - ft. - ft. - ft.
	REMARKS	
	<u>Chip in place</u>	



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-4813

Consulting Firm Fardon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Beniel

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner Center Point 8801 Marginal

Well Street Address 8801 E Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4, SE 1/4, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

Above-ground completion with bollards Flush monument

Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description

	MONUMENT TYPE:	_____	_____ ft.
	CONCRETE SURFACE SEAL	<u>2 ft</u>	_____ ft.
	PVC BLANK	<u>X</u>	_____ ft.
	BACKFILL	<u>20 ft.</u>	_____ ft.
	TYPE: <u>Bentonite Chips</u>		_____ ft.
	PVC SCREEN	<u>X</u>	_____ ft.
	SLOT SIZE:	_____	_____ ft.
TYPE:	_____	_____ ft.	
GRAVEL PACK	<u>X</u> ft.	_____ ft.	
MATERIAL:	_____	_____ ft.	
WELL DEPTH	<u>20</u>	_____ ft.	

REMARKS

Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
 Decommission ⇒ Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-49A

Consulting Firm Fardon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Benid

Driller/Engineer/Trainee Signature [Signature]

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 Remediation Well Grounding Well
 Geotechnical Soil Boring Ground Source Heat Pump
 Environmental Boring Other _____
 Soil- Vapor- Water-sampling

Property Owner Centerpoint 8801 Marginal

Well Street Address 8801 E. Marginal Way S.

City TUCKER County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4, SE 1/4, Section 33, Town 24N, Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards Flush monument

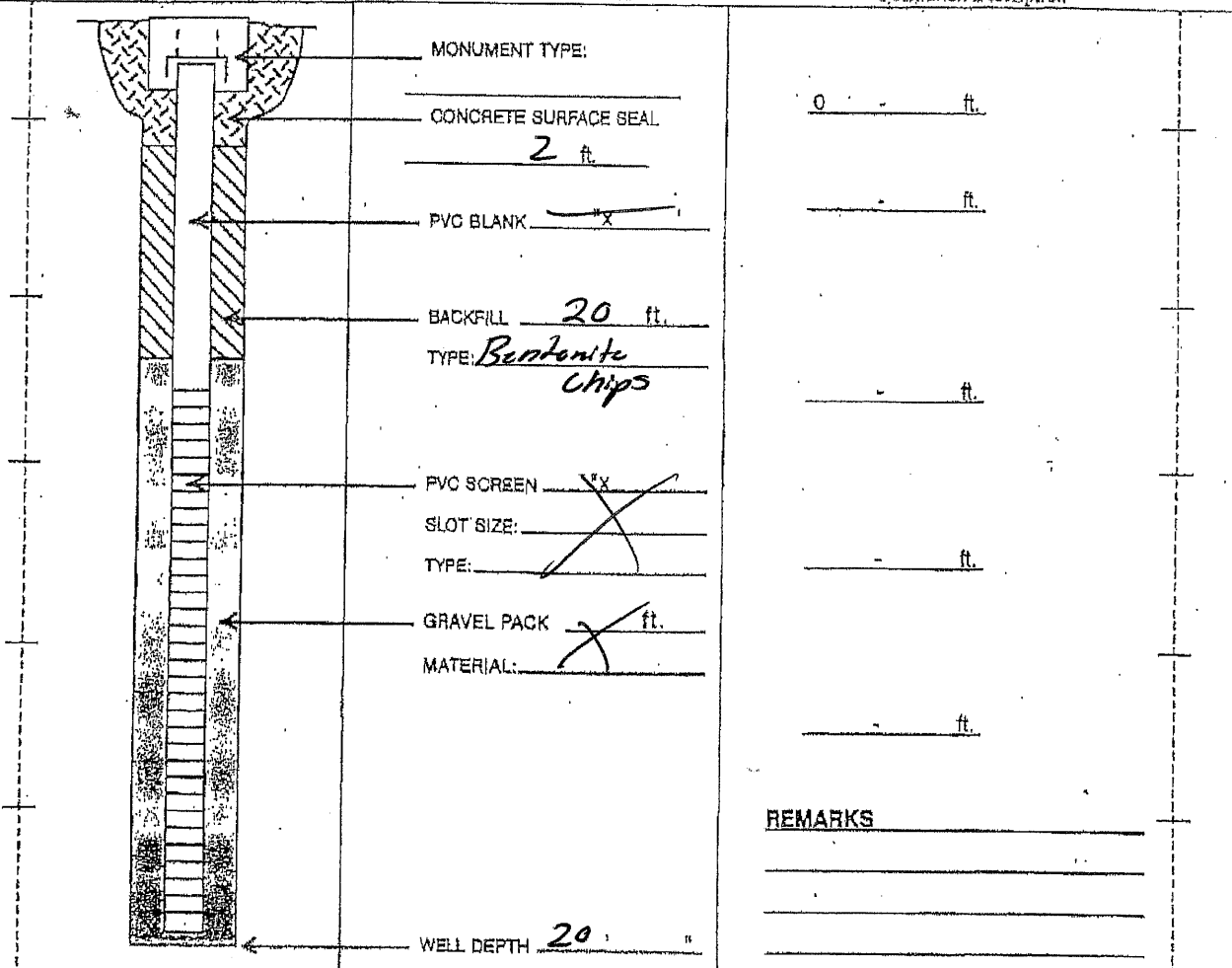
Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



MONUMENT TYPE: _____
 CONCRETE SURFACE SEAL _____
2 ft.
 PVC BLANK X
 BACKFILL 20 ft.
 TYPE: Bentonite Chips
 PVC SCREEN X
 SLOT SIZE: _____
 TYPE: _____
 GRAVEL PACK X ft.
 MATERIAL: _____

0 _____ ft.
 _____ ft.
 _____ ft.
 _____ ft.
 _____ ft.

REMARKS



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission \Rightarrow Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name MW-49 B

Consulting Firm Farallon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

- Driller Trainee Engineer

Name (Print Last, First Name) Curtis, Benid

Driller/Engineer/Trainee Signature

License No. 3284

Company Name Holt

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
- Remediation Well Grounding Well
- Geotechnical Soil Boring Ground Source Heat Pump
- Environmental Boring Other _____
- Soil- Vapor- Water-sampling

Property Owner Centerpoint 8801 Marginal

Well Street Address 8801 E Marginal Way S

City Tukwila County King

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE $\frac{1}{4}$ - $\frac{1}{4}$, SE $\frac{1}{4}$, Section 33 Town 24N Range 4E

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 inches Casing diameter _____ inches

Static water level _____ ft below top of casing Date _____

- Above-ground completion with bollards Flush monument

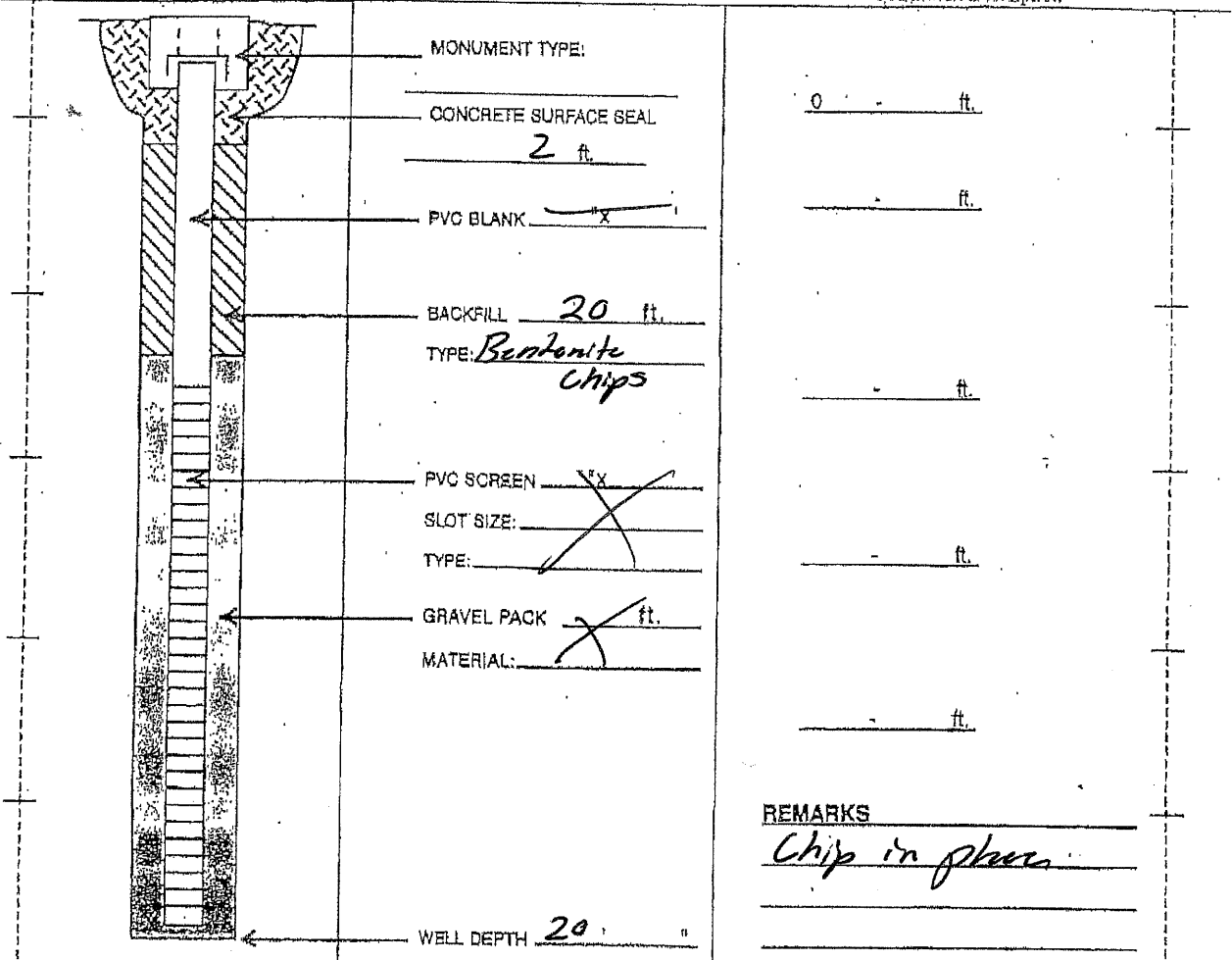
\hookrightarrow Stick-up of top of well casing _____ ft above ground surface

Start Date May 24, 2021 Completed Date May 24, 2021

Construction/Design

Well Data

Formation Description



REMARKS

Chip in place



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- Construction
- Decommission ⇒ Original NOI No. _____

Ecology Well ID Tag No. _____

Site Well Name RW-3

Consulting Firm Farallon

Was a variance approved for this well/boring? Yes No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

Driller Trainee Engineer

Name (Print Last, First Name) Robert O Chipman

Driller/Engineer/Trainee Signature Robert O Chipman

License No. 2991

Company Name Holt Services

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE66763

Type of Well:

- Resource Protection Well Injection Point
 - Remediation Well Grounding Well
 - Geotechnical Soil Boring Ground Source Heat Pump
 - Environmental Boring Other _____
- ↳ Soil- Vapor- Water-sampling

Property Owner Centerpoint 8801 Marginal

Well Street Address 8801 East Marginal Way South

City Tukwilla County King-17

Tax Parcel No. _____

Location (see instructions): WWM or EWM

SE 1/4-1/4 SE 1/4, Section 33, Town 24 N Range 4

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

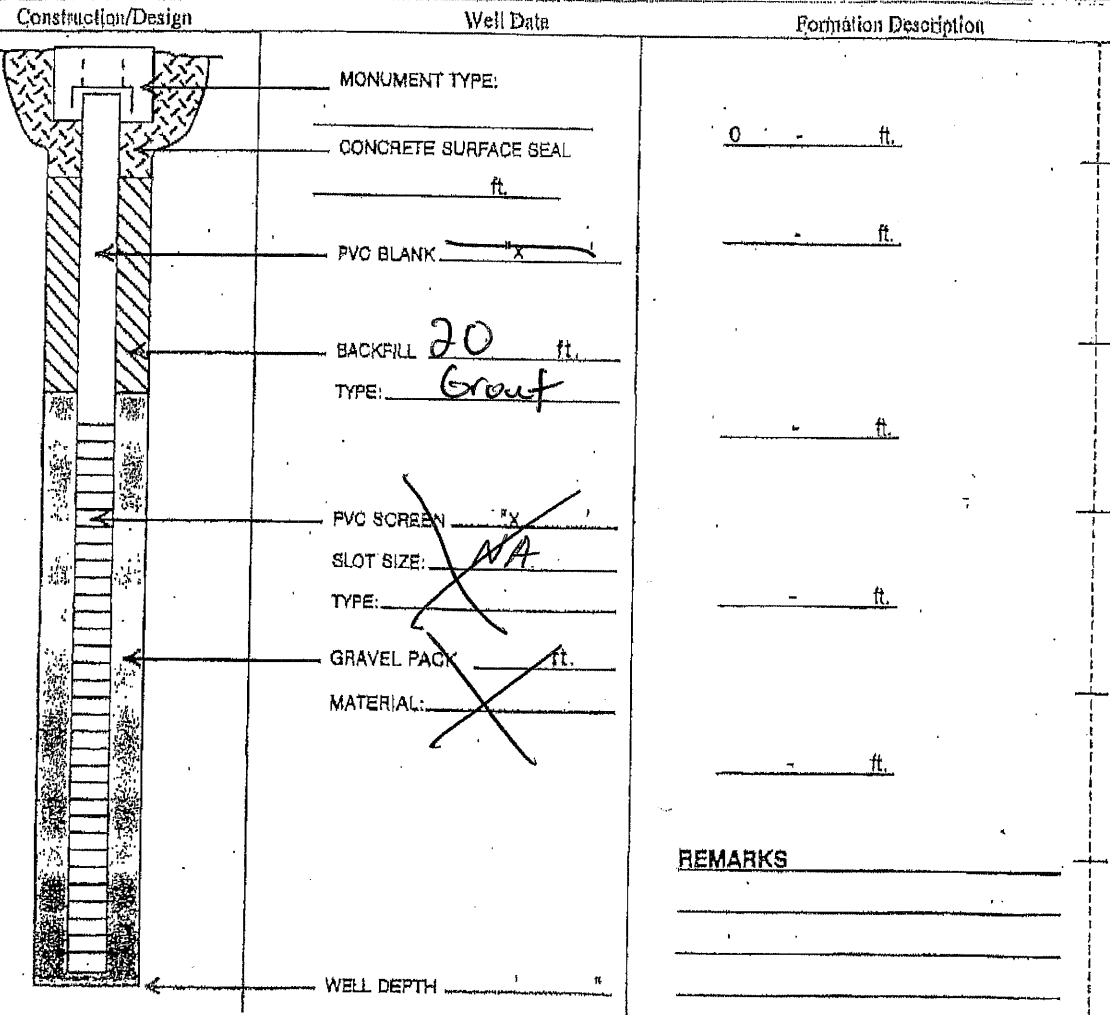
Borehole diameter _____ inches Casing diameter 6" inches

Static water level 6 ft below top of casing Date 6-2-21

Above-ground completion with bollards Flush monument

↳ Stick-up of top of well casing 0 ft above ground surface

Start Date 6-2-21 Completed Date 6-2-21



Appendix D

Analytical Reports for Monitoring of Airborne Lead

CONTENTS

- NVL Laboratories, Batch # 2116366.00
- NVL Laboratories, Batch # 2116524.00

September 20, 2021

Christian Canfield

Shannon & Wilson, Inc. - Seattle

400 North 34th Street, Suite 100

Seattle, WA 98103



NVL Batch # 2116366.00

RE: Total Metal Analysis
Method: NIOSH 7082 Lead by FAA <air>
Item Code: FAA-01

Client Project: 8801

Location: Tukwila, WA

Dear Mr. Canfield,

NVL Labs received 3 sample(s) for the said project on 9/16/2021. Preparation of these samples was conducted following protocol outlined in NIOSH 7082, unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with NIOSH 7082 Lead by FAA <air>. The results are usually expressed in ug/filter and ug/m³. Test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more detail.

At NVL Labs all analyses are performed under strict guidelines of the Quality Assurance Program. This report is considered highly confidential and will not be released without your approval. Samples are archived after two weeks from the analysis date. Please feel free to contact us at 206-547-0100, in case you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read 'Shalini Patel'.

Shalini Patel, Lab Supervisor



Enc.: Sample results



Phone: 206 547.0100 | Fax: 206 634.1936 | Toll Free: 1.888.NVL.LABS (685.5227)
4708 Aurora Avenue North | Seattle, WA 98103-6516

Analysis Report

Total Lead (Pb)



Client: Shannon & Wilson, Inc. - Seattle
 Address: 400 North 34th Street, Suite 100
 Seattle, WA 98103


Batch #: 2116366.00

Matrix: Air
 Method: NIOSH 7082
 Client Project #: 8801
 Date Received: 9/16/2021
 Samples Received: 3
 Samples Analyzed: 3

Attention: Mr. Christian Canfield
 Project Location: Tukwila, WA

Lab ID	Client Sample #	Vol (L)	RL ug/m ³	Results in ug/filter	Results in ug/m ³
21104773	S-1	718	7.0	< 5.0	< 7.0
21104774	S-2	816	6.1	< 5.0	< 6.1
21104775	S-3	810	6.2	< 5.0	< 6.2

Sampled by: Client
 Analyzed by: Yasuyuki Hida Date Analyzed: 09/17/2021
 Reviewed by: Shalini Patel Date Issued: 09/20/2021



 Shalini Patel, Lab Supervisor

ug/ m³ = Micrograms per cubicmeter
 ug/filter = Micrograms per filter

RL = Reporting Limit
 '<' = Below the reporting Limit

Note : Method QC results are acceptable unless stated otherwise. Concentration (ug/m³) not reported if sample volume is zero.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

Preparation of above samples was conducted using microwave digestion in accordance with EPA Method 3051.

LEAD LABORATORY SERVICES



Company Shannon & Wilson, Inc. - Seattle	NVL Batch Number 2116366.00
Address 400 North 34th Street, Suite 100 Seattle, WA 98103	TAT 1 Day AH No
Project Manager Mr. Christian Canfield	Rush TAT
Phone (206) 632-8020	Due Date 9/17/2021 Time 4:50 PM
	Email ctc@shanwil.com
	Fax (206) 633-6777

Project Name/Number: 8801 **Project Location:** Tukwila, WA

Subcategory Flame AA (FAA)
Item Code FAA-01 NIOSH 7082 Lead by FAA <air>

Total Number of Samples 3 **Rush Samples** _____

	Lab ID	Sample ID	Description	A/R
1	21104773	S-1		A
2	21104774	S-2		A
3	21104775	S-3		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Kelly AuVu		NVL	9/16/21	1650
Analyzed by	Yasuyuki Hida		NVL	9/17/21	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions: _____

Date: 9/16/2021
 Time: 4:50 PM
 Entered By: Kelly AuVu

FOR ASBESTOS LEAD MOLD & OTHER

Client Shannon & Wilson, Inc. - Seattle
 Address 400 North 34th Street, Suite 100
Seattle, WA 98103
 Project Manager Christian Canfield
 Project Location Tukwila, WA

NVL Batch Number _____
 Client Job Number 8801
 Total Number of Samples 3
 Email address ctc@shanwil.com
 Phone (206) 632-8020
 Fax (206) 633-6777

	Print Below	Sign Below	Company	Date	Time
Sampled by	<u>Christian Canfield</u>	<u>[Signature]</u>	<u>SWI</u>	<u>9/16/21</u>	<u>1644</u>
Relinquished by	<u>Christian Canfield</u>	<u>[Signature]</u>	<u>SWI</u>	<u>9/16/21</u>	<u>1644</u>
Received by	<u>[Signature]</u>	<u>[Signature]</u>	<u>nu</u>	<u>9/16/2021</u>	<u>1650</u>
Analyzed by					
Reviewed by					

Sample ID: S-1 Location: 8801
 Sample Type: _____ Rush Activities: _____
 Protection: _____ Worker: Stell
 Decon: _____ Start _____ Stop _____
 Environment: _____ Time: 0825 1515 Liters Fibers /fields LOD Fibers /cc
 Pump #: _____ Total Minutes _____
 Date: _____ Rate: 2 LPM 1.5 LPM Average _____

Sample ID: S-2 Location: 8801
 Sample Type: _____ Rush Activities: _____
 Protection: _____ Worker: SWI
 Decon: _____ Start _____ Stop _____
 Environment: _____ Time: 0827 1515 Liters Fibers /fields LOD Fibers /cc
 Pump #: _____ Total Minutes _____
 Date: _____ Rate: 2 LPM 2 LPM Average _____

Sample ID: S-3 Location: 8801
 Sample Type: _____ Rush Activities: _____
 Protection: _____ Worker: AEC
 Decon: _____ Start _____ Stop _____
 Environment: _____ Time: 0830 1515 Liters Fibers /fields LOD Fibers /cc
 Pump #: _____ Total Minutes _____
 Date: _____ Rate: 2 LPM 2 LPM Average _____

Sample ID: _____ Location: _____
 Sample Type: _____ Rush Activities: _____
 Protection: _____ Worker: _____
 Decon: _____ Start _____ Stop _____
 Environment: _____ Time: _____ _____ Liters Fibers /fields LOD Fibers /cc
 Pump #: _____ Total Minutes _____
 Date: _____ Rate: _____ _____ Average _____

September 21, 2021

Ryan Peterson

Shannon & Wilson, Inc. - Seattle

400 North 34th Street, Suite 100

Seattle, WA 98103



NVL Batch # 2116524.00

RE: Total Metal Analysis
Method: NIOSH 7082 Lead by FAA <air>
Item Code: FAA-01

Client Project: 103485-008

Location: Tukwila, WA

Dear Mr. Peterson,

NVL Labs received 2 sample(s) for the said project on 9/20/2021. Preparation of these samples was conducted following protocol outlined in NIOSH 7082, unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with NIOSH 7082 Lead by FAA <air>. The results are usually expressed in ug/filter and ug/m³. Test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more detail.

At NVL Labs all analyses are performed under strict guidelines of the Quality Assurance Program. This report is considered highly confidential and will not be released without your approval. Samples are archived after two weeks from the analysis date. Please feel free to contact us at 206-547-0100, in case you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Lab Supervisor



Enc.: Sample results



Phone: 206 547.0100 | Fax: 206 634.1936 | Toll Free: 1.888.NVL.LABS (685.5227)
4708 Aurora Avenue North | Seattle, WA 98103-6516

Analysis Report

Total Lead (Pb)



Client: Shannon & Wilson, Inc. - Seattle
Address: 400 North 34th Street, Suite 100
Seattle, WA 98103

Batch #: 2116524.00

Matrix: Air
Method: NIOSH 7082
Client Project #: 103485-008
Date Received: 9/20/2021
Samples Received: 2
Samples Analyzed: 2

Attention: Mr. Ryan Peterson
Project Location: Tukwila, WA

Lab ID	Client Sample #	Vol (L)	RL ug/m ³	Results in ug/filter	Results in ug/m ³
21105430	S-4	720	6.9	< 5.0	< 6.9
21105431	S-5	720	6.9	< 5.0	< 6.9


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 09/21/2021

Date Issued: 09/21/2021


Shalini Patel, Lab Supervisor

ug/ m³ = Micrograms per cubicmeter

ug/filter = Micrograms per filter

Note : Method QC results are acceptable unless stated otherwise. Concentration (ug/m³) not reported if sample volume is zero.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

Preparation of above samples was conducted using microwave digestion in accordance with EPA Method 3051.

Bench Run No: 2021-0921-02

FAA-01

LEAD LABORATORY SERVICES



Company Shannon & Wilson, Inc. - Seattle Address 400 North 34th Street, Suite 100 Seattle, WA 98103 Project Manager Mr. Ryan Peterson Phone (206) 632-8020	NVL Batch Number 2116524.00 TAT 1 Day AH No Rush TAT Due Date 9/21/2021 Time 4:30 PM Email rbp@shanwil.com Fax (206) 633-6777
--	---

Project Name/Number: 103485-008 **Project Location:** Tukwila, WA

Subcategory Flame AA (FAA)
Item Code FAA-01 NIOSH 7082 Lead by FAA <air>

Total Number of Samples 2 **Rush Samples** _____

	Lab ID	Sample ID	Description	A/R
1	21105430	S-4		A
2	21105431	S-5		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Kelly AuVu		NVL	9/20/21	1630
Analyzed by	Yasuyuki Hida		NVL	9/21/21	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions: _____

Date: 9/20/2021
 Time: 4:28 PM
 Entered By: Kelly AuVu



WALK-IN SAMPLE SUBMITTAL FORM

- Asbestos
- Lead
- Mold
- Other (specify) _____

First Ryan Last Peterson
 Address 400 N. 34th Street, Suite 100
Seattle, WA 98103
 Phone _____

Company Shannon & Wilson
 Cell (509) 319-1135
 Email RBPE@shannmil.com

Project Name/Number 103485-008

Project Location Tukwila, WA

Pricing	1-Hr	2-Hr	4-Hr	1-Day
Asbestos	75.00	70.00	65.00	50.00
Lead	N/A	75.00	70.00	50.00
Mold	N/A	N/A	105.00	82.50

Turn Around Time

- 1 Hour (Asbestos only)
- 2 Hours (Lead only)
- 4 Hours (Asbestos, Lead, & Mold)
- 24 Hours (Asbestos, Lead, & Mold)

Total Number of Samples 2

Sample ID	Description	A/R
1	<u>filter for personal air sampler</u>	
2	<u>" "</u>	
3	Time on: 1056 Time off: 1544 Flow rate: 2.5 } Same for both	
4		
5		
6		
7		
8		
9		
10		

Print Name	Signature	Company	Date	Time
Sampled by				
Relinquish by	<u>RYAN PETERSON</u>	<u>S&W</u>	<u>9/20/21</u>	<u>1628</u>

Office Use Only

Print Name	Signature	Company	Date	Time
Received by				
Analyzed by				
Called by				
Faxed/Email by				

Appendix E

Imported Fill; Selection, Placement, and Compaction

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Exhibits

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Exhibit E-3: Photo of Quarry Spalls (Foreground) Delivered to Area 5 on the 8801 Property ...
..... E-4

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Exhibit E-5: Findings from Chemical Analysis of Quarry Spalls – August 2022 E-7

Exhibit E-6: Photo of Crushed Rock Delivered to Area 2 on the 8801 Property E-9

Exhibit E-7: Photo of Quarry Spalls Overlain by Geotextile Overlain by Gravel Borrow at
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Exhibit E-8: Fill Placed in Excavation Areas E-12

Exhibit E-9: Photos of Compaction Activities E-13

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION

Attachments

- Attachment E-1: Gravel Borrow, Gradation Results, Washington Rock Quarries Quality Test Report
- Attachment E-2: Gravel Borrow, Gradation and Proctor Results, HWA GeoSciences, Inc., Project No. 2011-048-23
- Attachment E-3: Gravel Borrow, Proctor Results, Shannon & Wilson, Project No. 103485-001
- Attachment E-4: Gravel Borrow, Gradation and Proctor Results, Krazan & Associates, Inc., Sample Number 21L769
- Attachment E-5: Gravel Borrow, Gradation and Proctor Results, Krazan & Associates, Inc., Sample Number 21L779
- Attachment E-6: Gravel Borrow, Gradation and Proctor Results, Krazan & Associates, Inc., Sample Number 22L573
- Attachment E-7: Gravel Borrow, Chemical Results, Fremont Analytical, Inc., Work Order No. 2109200
- Attachment E-8: Gravel Borrow, Chemical Results, ALS Environmental, Request No. K2198871
- Attachment E-9: Gravel Borrow and Quarry Spall, Chemical Results, Fremont Analytical, Inc., Work Order No. 2207288
- Attachment E-10: Quarry Spall, Chemical Results and #1 Modified SPLP, Fremont Analytical, Inc., Work Order No. 2109218
- Attachment E-11: Area 5 Water, Chemical Results, Fremont Analytical, Inc., Work Order No. 2109439
- Attachment E-12: Quarry Spall, #2 Modified SPLP Results, Fremont Analytical, Inc., Work Order No. 2110053
- Attachment E-13: Quarry Spall, TCLP Results, ALS Environmental Work Order No. EV22020128
- Attachment E-14: Quarry Spall, ALS Environmental, Work Order No. EV22070110
- Attachment E-15: Quarry Spall, Fremont Analytical, Inc., Work Order No. 2208185
- Attachment E-16: Crushed Rock, Gradation Results, Iron Mountain Quarry
- Attachment E-17: Crushed Rock, Gradation Results, Shannon & Wilson, Project No. 103485-001
- Attachment E-18: Crushed Rock, Gradation and Proctor Results, Krazan & Associates, Inc., Sample No. 21L827
- Attachment E-19: Mirafi® 140N, Product Data Sheet, Tencate Geosynthetics
- Attachment E-20: Compaction Reports, Krazan & Associates, Inc.

E.1 EXECUTIVE SUMMARY

After excavation of contaminated soil and subsequent confirmation sampling, fill was imported, placed in excavation areas (Areas 1 through 8), and compacted. Excavation spoils were not used as backfill. The imported fill was evaluated for gradation, compaction characteristics, chemical concentrations prior to importation, and compaction characteristics during placement.

Approximately 7,847 tons of gravel borrow, 3,760 tons of quarry spalls, and 282 tons of crushed rock were used as fill. Quarry spalls were used where the excavations extended below the water table and were overlain by a geotextile. Gravel borrow, quarry spalls, or crushed rock were placed above the groundwater table.

Excavators were used to spread the fill in lifts. Quarry spalls were compacted at up to 1-foot lifts using an excavator bucket and by tracking the excavator over the lift. Quarry spalls were compacted until lifts were observed to have a dense and unyielding condition.

Gravel borrow and crushed rock were compacted at up to 8-inch lifts using a smooth drum vibratory roller. A walk-behind vibratory-plate compactor was used in areas where the larger vibratory roller was restricted due to excavation size. Gravel borrow and crushed rock were compacted to at least 95% of maximum dry density as measured by a nuclear densometer, except for Areas 2, 3, 4, and 5. Crushed rock at Area 2 was compacted to a dense and unyielding condition as evaluated using a ½-inch-diameter metal T-probe in a grid pattern throughout individual lifts. Gravel borrow at Areas 3, 4, and 5 was compacted to at least 90% of maximum dry density as measured by a nuclear densometer.

Additional detail is provided in the following sections.

E.2 IMPORTED FILL SELECTION

Imported fill was evaluated for gradation, compaction characteristics, and chemical concentrations prior to import to the 8801 property. The material types and sources are listed below followed by a discussion of findings from the evaluation:

- 4-inch-minus gravel borrow from King Creek Pit in Orting, Washington, operated by Washington Rock Quarries, Inc.
- Quarry spalls from the Granite Falls Quarry in Granite Falls, Washington, operated by Iron Mountain Quarry, LLC.

- 2.5-inch-minus crushed rock from Granite Falls Quarry in Granite Falls, Washington, operated by Iron Mountain Quarry, LLC.

E.2.1 Gravel Borrow

Samples of gravel borrow were evaluated for gradation, compaction characteristics, and chemical contents as discussed below.

E.2.1.1 Gradation of Gravel Borrow

Results of gradation analysis of the gravel borrow were provided by the quarry (Attachment E-1) and the material was separately analyzed for gradation by HWA GeoSciences, Inc. (Attachment E-2). Based on the gradation results and visual observation, the material consisted of light brown, Poorly Graded Sand with Gravel. A photo of the gravel borrow is provided as Exhibit E-1.



Exhibit E-1: Photo of Gravel Borrow Delivered to Area 1 on the 8801 Property

E.2.1.2 Compaction Test of Gravel Borrow

Representative samples of gravel borrow were collected from the quarry prior to the commencement of excavations and were tested using a modified Proctor (ASTM D1557). The value of the rock-corrected maximum dry density measured by the modified Proctor was used as a reference value to measure percent compaction of lifts of gravel borrow in the excavation areas.

Representative samples of gravel borrow were also progressively collected from the 8801 property during importation of the gravel borrow and the samples were tested using a

modified Proctor to adjust the rock-corrected maximum dry density to the current imported material. The rock-corrected maximum dry density was measured at 121 to 145.4 pounds per cubic foot. The lab reports are available as Attachments E-2 through E-6.

Compaction verification procedures and results are discussed in Section E.4.

E.2.1.3 Chemical Analysis of Gravel Borrow

In accordance with the Compliance Monitoring Plan (CMP) Section 5.2.6, samples of gravel borrow were analyzed to confirm chemical concentrations, including that no total petroleum hydrocarbons (TPH) or polychlorinated biphenyls (PCBs) were present at detectable levels and that carcinogenic polycyclic aromatic hydrocarbons (cPAHs), arsenic, copper, and lead did not exceed the cleanup level (CUL). Four samples were analyzed, and 7,827 tons of gravel borrow were imported meeting the requirements of at least one sample tested per 5,000 tons. The sample results were acceptable when compared to the screening criteria as shown in Exhibit E-2 below. The lab reports are provided as Attachments E-7, E-8, E-9, and E-14 (sample ID "PAC-S1").

Exhibit E-2: Chemical Screening Criteria and Results

Analyte	Screening Criteria	Results			
		Sample 1	Sample 2	Sample 3	Sample 4
TPH-gasoline	Not Detectable	Not Detected	Not Detected	Not Detected	Not Detected
TPH-diesel	Not Detectable	Not Detected	Not Detected	Not Detected	Not Detected
TPH-heavy oil	Not Detectable	Not Detected	Not Detected	Not Detected	Not Detected
PCBs	Not Detectable	Not Detected	Not Detected	Not Detected	Not Detected
Total cPAH TEQ	0.005	Not Detected	Not Analyzed	Not Detected	Not Detected
Arsenic	7.3	4.20	3.4	3.93	4.1
Copper	36	22.4	25	24.3	27
Lead	250	2.70	3.8	2.74	3.0

NOTES:

Criteria provided in milligrams per kilogram.

TEQ = toxicity equivalency quotient

E.2.2 Quarry Spalls

Samples of quarry spalls were evaluated for gradation and chemical contents as discussed below.

E.2.2.1 Gradation of Quarry Spalls

The quarry spalls were visually evaluated for gradation. The quarry spalls appeared to be predominantly bluish-gray, 2- to 8-inch angular rock with trace amounts of fine rock pieces. A photo of the quarry spalls is provided below (see Exhibit E-3).



Exhibit E-3: Photo of Quarry Spalls (Foreground) Delivered to Area 5 on the 8801 Property

E.2.2.2 Chemical Analysis of Quarry Spalls – September 2021

In accordance with the CMP Section 5.2.6, prior to mobilization for excavation activities in September 2021, samples of quarry spalls were analyzed to confirm chemical concentrations. Analytical screening criteria are summarized in Exhibit E-2. At least one sample per 5,000 tons was tested.

Chemical analysis of quarry spalls from multiple quarries was undertaken due to elevated detection of copper in samples. After examining the various sources, quarry spalls from the quarry with the lowest copper concentration was selected for further testing as discussed below.

In summary, the quarry spalls were found to have acceptable chemical characteristics based on analysis of chemical concentrations using standard methods and using a modified Synthetic Precipitation Leaching Procedure (SPLP) to evaluate for leachable copper. The analytical procedures and results as summarized in Exhibit E-4 and discussed below the exhibit.

Exhibit E-4: Findings from Chemical Analysis of Quarry Spalls – September 2021

Method	Analytical Methods	Results	Sample ID and Lab Report
Analysis of TPH, PCBs, cPAHs, arsenic, copper, and lead.	Standard methods were used including crushing of the sample to reduce particle size.	Concentrations were acceptable except for copper which was 95.4 mg/kg.	Sample ID = "Sample #2 Renton Concrete Recyclers Quarry Spalls Rock 4-8 Inch"
SPLP and analysis of leachate for copper	Standard methods were used. The sample was crushed to reduce particle size and synthetic precipitation with acid was used.	Copper detected at 38 ug/L in the leachate (exceeded groundwater CUL of 8 ug/L)	Lab Report available in Attachment E-10.
#1 Modified SPLP. Analysis of SPLP leachate for copper.	The SPLP was performed on four discrete samples of the same material. The SPLP was modified as follows: samples were processed as received (i.e., particle size was not reduced) and site groundwater was used to tumble the sample. Site groundwater was analyzed as well as SPLP leachate.	<u>Uncorrected</u> <u>Corrected*</u>	Sample ID = "Renton Concrete Recyclers Quarry Spalls Rock 4-8 Inch" Fractions A, B, C, and D.
		24.1 ug/L 4.1ug/L 22.6 ug/L 2.6 ug/L 19.2 ug/L 0.0 ug/L 20.1 ug/L 0.1 ug/L	
Analysis of copper in the groundwater collected from Area 5 pit on the 8801 property and used for SPLP.	Standard methods	20.0 ug/L dissolved 49.6 ug/L total	Sample ID = "A5-GW" Lab Report available in Attachment E-11.
#2 Modified SPLP. Analysis of SPLP leachate for copper.	The SPLP was performed on two discrete samples of the same material. The SPLP was modified as follows: The sample was processed as received (i.e., particle size was not reduced) and laboratory deionized (DI) water was used to tumble the sample and analyzed as the leachate.	< 4 ug/L < 4 ug/L (not detected)	Sample ID = "Renton Concrete Recyclers Quarry Spalls Rock 4-8" A and B. Lab Report available in Attachment E-12.

ug/L = micrograms per liter

Initially, a sample of the quarry spalls was analyzed for concentrations of TPH, PCBs, cPAHs, arsenic, copper, and lead using standard procedures, including crushing the rock. Chemical concentrations detected in the sample were acceptable when compared to the screening criteria, except for copper, which was detected at 95.4 milligrams per kilogram (mg/kg) and exceeded the screening criteria of 36 mg/kg. The copper analysis was undertaken in accordance with U.S. Environmental Protection Agency Method 200.8 and involved acid digestion of the sample to evaluate the concentration of copper.

Subsequently, an SPLP was performed to evaluate the leachable copper in the quarry spalls, since the soil to groundwater pathway is the driver for the CUL of copper in soil at the 8801 property. In accordance with the SPLP, the particle size of the rock was reduced to 1 centimeter (via crushing) and a synthetic acid solution was used to tumble the crushed sample for the prescribed time. The reduction in grain size resulted in additional surface area and therefore greater leachability when compared to an unaltered sample. The synthetic acid solution was approximately 5.0 pH and was more acidic than groundwater at the 8801 property (5.6 to 6.3 pH measured in February 2021), which resulted in greater leachability when compared to actual conditions on the 8801 property. Copper was detected in the leachate at 38 micrograms per liter (ug/L) and exceeded the 8801 property groundwater CUL of 8 ug/L.

After consultation and acceptance of a modified approach by the Washington State Department of Ecology,¹ a separate sample of quarry spalls was analyzed using a modified SPLP (#1 modification in Exhibit E-4) under conditions that were more similar to the 8801 property to provide a more representative evaluation of leachable copper. The #1 modified SPLP was performed on four replicates and modified from standard SPLP as follows:

- The quarry spalls were processed “as received” (i.e., the particle size was not reduced). The quarry spalls that were imported to the 8801 property were predominantly 2 to 8 inch in size. The testing procedure used a sample of 2- to 4-inch quarry spalls due to equipment limitations. The 2- to 4-inch size provided a more representative surface area than the standard SPLP procedure which required reduction in grain size to 1 centimeter.
- Groundwater was collected from Area 5 pit on the 8801 property and used to tumble the rock sample for approximately 30 to 45 minutes. The tumbled solution then sat in the testing container for a total contact time of 20 hours. Groundwater from the Area 5 pit was used in place of a synthetic acid solution to provide a more representative pH that would be encountered on the 8801 property. The volume of water and total time that each sample remained in contact with the groundwater was consistent with the SPLP requirements.
- After tumbling, the leachate from the four replicate SPLPs were analyzed for copper per standard methods. Groundwater from the Area 5 pit was separately analyzed for copper content. The detected copper in the groundwater was subtracted from the detected copper in the leachate to provide the concentration of copper that had leached

¹ Hobbs, Erin, 2021a, Telephone conversation between Ms. Erin Hobbs and Ms. Priscilla Tomlinson, 8801 Site Project Manager and LDW toxicologist, Washington State Department of Ecology, Toxics Cleanup Program, Shoreline, Wash., and Ms. Meg Strong, Shannon & Wilson, Seattle, Wash., September 30.

from the quarry spalls. The leached copper was detected up to 4.1 ug/L in the four replicates which was less than the groundwater CUL of 8 ug/L.

Based on the analytical results, the Ecology Project Manager agreed that the quarry spalls did not appear to be a significant source of leachable copper to groundwater.²

At the request of Ecology, a separate sample of quarry spalls was analyzed using a modified SPLP (#2 modification in Exhibit E-4). The #2 modified SPLP was performed for the record and was not used as selection criteria. The SPLP was performed on two replicates and differed from the #1 modified SPLP in that laboratory deionized (DI) water was used to tumble the sample instead of site groundwater. The #2 modified SPLP was otherwise performed according to the standard SPLP procedures with the #1 modifications.

Copper was not detected in the leachate from the two replicates tested using the #2 modified SPLP.

E.2.2.3 Chemical Analysis of Quarry Spalls – August 2022

Remedial excavation activities were suspended during December 2021 and recommenced during August 2022. Prior to recommencement, a sample of quarry spalls was collected from the source quarry and analyzed for concentrations of TPH, PCBs, cPAHs, arsenic, copper, and lead using standard procedures. Chemical analysis of the quarry spalls was performed in several iterations due to detections of cPAHs, arsenic, and copper in samples. In summary, the quarry spalls were found to have acceptable chemical characteristics based on analysis of chemical concentrations using standard methods and using a modified SPLP to evaluate for leachable copper and arsenic. The analytical procedures and results as summarized in Exhibit E-5 and discussed below the exhibit.

Exhibit E-5: Findings from Chemical Analysis of Quarry Spalls – August 2022

Method	Analytical Methods	Results	Sample ID and Lab Report
Analysis of TPH, PCBs, cPAHs, arsenic, copper, and lead.	Standard methods were used including crushing of the sample to reduce particle size. ALS crushed the sample.	Concentrations were acceptable except for cPAHs, arsenic, and copper.	Sample ID = "PAC-S2" Attachment E-14
Analysis of TPH, PCBs, cPAHs, arsenic, copper, and lead in the whole rock. Modified SPLP with analysis of arsenic	Standard methods were used including crushing of the sample to reduce particle size. Shannon & Wilson crushed the sample.	Concentrations were acceptable except for arsenic and copper (based on acid digestion of the whole rock).	Sample ID = "Quarry Spalls" Attachment E-9

² Hobbs, Erin, 2021b, Email from Ms. Erin Hobbs, 8801 Site Project Manager, Washington State Department of Ecology, Toxics Cleanup Program, Shoreline, Wash., to Ms. Meg Strong, Shannon & Wilson, Seattle, Wash., October 1.

and copper in the leachate.	The SPLP was modified as follows: Laboratory DI water was used to tumble the sample and leachate analyzed.	Subsequent analysis of the SPLP leachate had acceptable concentrations of arsenic and copper.	
Analysis of cPAHs, arsenic, and copper.	Standard methods were used including crushing of the sample to reduce particle size. The quarry crushed the sample.	Concentrations were acceptable except for arsenic and copper.	Sample ID = "Quarry Spalls" Attachment E-15
TCLP with analysis of leachate for arsenic and copper.	Standard methods were used including crushing of the sample to reduce particle size. The quarry crushed the sample	Concentrations were acceptable.	Sample ID = "SCR Belt" Attachment E-13

ALS = Environmental; TCLP = Toxicity Characteristic Leaching Procedure

A sample of quarry spalls was collected from the source quarry and split into two sub-samples. One sample was submitted to ALS Environmental of Everett, Washington, and the other was submitted to Fremont Analytical, Inc. of Seattle, Washington, for quality assurance purposes.

The sample submitted to ALS was crushed by ALS to reduce the particle size as required by the testing procedures and had detectable cPAHs and arsenic and copper that were greater than the acceptance criteria (Attachment E-14). The Fremont Analytical sample was crushed by Shannon & Wilson prior to submittal to the laboratory and had acceptable concentrations of chemicals (Attachment E-9).

Due to the detection of cPAHs, arsenic, and copper, a separate sample of quarry spalls was collected from the quarry and submitted to Fremont Analytical. The quarry crushed the rock to reduce the sample size as required by the testing procedures. The sample was analyzed for cPAHs, arsenic, and copper. Chemical concentrations detected in the samples were acceptable when compared to the screening criteria, except for arsenic, which was detected at 11.3 mg/kg and exceeded the screening criteria of 7.3 mg/kg and copper, which was detected at 36.5 mg/kg and exceeded the screening criteria of 36 mg/kg (Attachment E-15). Since cPAHs were detected in only the ALS sample and not the two samples submitted to Fremont Analytical, in our opinion, the detection of cPAHs was anomalous and potentially associated with the crushing equipment at ALS.

Due to the detections of arsenic and copper above the screening criteria in two of three analyses, an SPLP was performed to evaluate the leachable arsenic and copper in the quarry spalls, since the soil to groundwater pathway is the driver for the CUL of arsenic and copper in soil at the 8801 property. In accordance with the SPLP protocol, the particle size of the rock was reduced to 1 centimeter via crushing. Shannon & Wilson crushed the sample. The SPLP was modified to tumble the sample with a solution of DI water instead of an acid solution. Arsenic and copper were not detected in the SPLP leachate (Attachment E-9).

Furthermore, the quarry provided an analytical report for a sample of quarry spalls that was collected in February 2022 and analyzed for TCLP. The sample was crushed at the quarry to reduce the particle size consistent with the testing procedure. Other testing requirements were not modified according to the analytical report. Arsenic and copper were not detected in the TCLP leachate (Attachment E-13).

Based on the modified SPLP and standard TCLP results, the concentrations of arsenic and copper in the quarry spalls do not appear to be a significant source of leachable copper or arsenic to groundwater. The quarry spalls were accepted for use as backfill.³

E.2.3 Crushed Rock

Samples of crushed rock were evaluated for gradation, compaction characteristics, and chemical contents as discussed below.

E.2.3.1 Gradation of Crushed Rock

Samples of crushed rock were analyzed for gradation by three entities: the source quarry (Attachment E-16), Shannon & Wilson (Attachment E-17), and Krazan (Attachment E-18). Based on gradation results and visual observation, the material consisted of gray to brown, Well-Graded Gravel with Sand. A photo of the crushed rock is provided as Exhibit E-6.



Exhibit E-6: Photo of Crushed Rock Delivered to Area 2 on the 8801 Property

³ Kelley, Chris, 2022, 8801 – request for a call tomorrow follow up: Email from Chris Kelley, Department of Ecology, Toxics Cleanup Program, to Meg Strong, Shannon & Wilson, Seattle, Wash., August 22.

E.2.3.2 Compaction Test of Crushed Rock

Krazan evaluated the compaction characteristics of a sample of crushed rock using a modified Proctor (ASTM D1557 Method C Modified) test. The results are provided as Attachment E-18.

E.2.3.3 Chemical Analysis of Crushed Rock

The crushed rock was the same source material as the quarry spalls except a smaller particle size. Chemical analysis of the quarry spalls was used to characterize the crushed rock.

The copper content of the quarry spalls was found to be acceptable based on a modified SPLP. The copper content of the crushed rock is estimated to be like the quarry spalls. Placement of the crushed rock on the 8801 property was limited to Area 2. Due to the controlled and limited use of crushed rock, the potential leachability of copper in the crushed rock may be less than estimated from the quarry spalls analysis based on two factors:

- The crushed rock was placed above the water table in Area 2, reducing the potential to contact groundwater and therefore reducing the leachability.
- The crushed rock was placed beneath the proposed footprint of a new building. The construction plans for the building include a concrete slab floor overlying an impermeable membrane overlying soil. The building materials will limit the potential for infiltration of water through the crushed rock and therefore reduce the leachability.

E.3 IMPORTED FILL PLACEMENT

Fill was imported to the 8801 property via truck and trailers and directly placed into the excavation areas or temporarily stockpiled prior to placement. Excavators were used to spread the imported fill in the excavation areas (Areas 1 through 8). The following criteria were used when placing fill in Areas 1 through 8:

- The proposed future use of the area was evaluated when selecting the fill type and depth. The proposed future use of areas was communicated by the property owner (CenterPoint).
- Quarry spalls were used for backfill below the water table. Based on previous assessments, groundwater on the 8801 property is estimated to be 8 to 10 feet below ground surface.
- Gravel borrow, quarry spalls, or crushed rock were placed above the groundwater table.
- A geotextile was placed between quarry spalls and overlying fill to limit the introduction of fines to the quarry spalls. The geotextile was Mirafi® 140N by Tencate

Geosynthetics. A product data sheet for Mirafi® 140N is provided as Attachment E-19. A representative photo of the placement of the geotextile is provided in the following Exhibit E-7.



Exhibit E-7: Photo of Quarry Spalls Overlain by Geotextile Overlain by Gravel Borrow at Area 5. View Direction is Northwest.

The quantity of fill placed in the 8801 property includes:

- 7,847 tons of gravel borrow
- 3,760 tons of quarry spalls
- 282 tons of crushed rock

The fill material selected for excavation areas is summarized in the following Exhibit E-8.

Exhibit E-8: Fill Placed in Excavation Areas

Area	Fill Material and Depths ¹
1	Gravel borrow was placed from the bottom of the excavation (~4 feet depth) to ground surface.
2	Quarry spalls were placed from the excavation bottom (-9 feet bgs) to 8 feet depth and overlain by a geotextile. Thereafter, crushed rock was placed to the ground surface.
3	Quarry spalls were placed from the excavation bottom (~7 feet depth) to 5 feet depth and overlain by a geotextile. Thereafter, gravel borrow was placed to the ground surface.
4	Quarry spalls were placed from the excavation bottom (up to 15 feet depth) to 3.5 feet depth and overlain by a geotextile. Thereafter, gravel borrow was placed to the ground surface.
5	Quarry spalls were placed from the excavation bottom (up to 12 feet depth) to 5 feet depth and overlain by a geotextile. Thereafter, gravel borrow was placed to the ground surface.
6	Gravel borrow was placed from the excavation bottom (~6 feet depth) to ground surface.
7	Gravel borrow was placed from the excavation bottom (-9 feet depth) to ground surface.
8	Quarry spalls were placed from the excavation bottom (~10 feet depth) to 5 feet depth and overlain by a geotextile. Thereafter, gravel borrow was placed to the ground surface.

NOTES:

1. In some areas, the vertical extent of excavation varied within the excavation due to the distribution of detected contamination and/or obstructions to excavation. The horizontal and vertical extent of excavations are provided in cross sections in the main report.
~ = approximately; bgs = below ground surface

E.4 IMPORTED FILL COMPACTION

Quarry spalls were compacted at up to 1-foot lifts using an excavator bucket and by tracking the excavator over the lift. Quarry spalls were compacted until lifts were observed to have a dense and unyielding condition.

Gravel borrow and crushed rock were compacted at up to 8-inch lifts using a smooth drum vibratory roller. A walk-behind vibratory-plate compactor was used for compaction in areas where the larger vibratory roller was restricted due to excavation size. Photos of compaction activities are provided as Exhibit E-9.



Exhibit E-9: Photos of Compaction Activities. Clockwise From Top-Left: Photo of Excavator Compacting Quarry Spalls in Area 5. View Direction is Southeast. Top-Right: Photo of Smooth-Drum Vibratory Roller in Area 1. View Direction is North. Bottom-Right: Photo of Walk-Behind Vibratory-Plate Compactor in Area 6. View Direction is Southwest. Bottom-Left: Photo of Nuclear Densometer in Area 1.

Gravel borrow and crushed rock were compacted to at least 95% of maximum dry density (except for Areas 2, 3, 4, and 5 as discussed below) as measured by a nuclear densometer. Percent compaction was measured at least once per 10,000 square feet per lift. Geotechnical staff from Krazan evaluated the compaction. Krazan's compaction reports are attached as Attachment E-20.

The nuclear densometer measurements were referenced to results from modified Proctors of representative samples. The Proctor tests were performed prior to the start of fill placement and progressively during placement and compaction of fill. Lab reports for the Proctors are provided as Attachments E-2 through E-6 and E-18.

Crushed rock at Area 2 was compacted to a dense and unyielding condition as evaluated using a ½-inch-diameter steel T-probe in a grid pattern throughout the individual lifts. A

nuclear densometer was used to measure the percent compaction for informational purposes. The percent compaction was measured at values of at least 87% of maximum dry density except in one lift in a 6-foot square area where the measured compaction was 84%.

Gravel borrow at Areas 3, 4, and 5 was compacted to at least 90% of maximum dry density as measured by a nuclear densometer.

Attachment E-1

Gravel Borrow, Gradation Results, Washington Rock Quarries Quality Test Report

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



Quality Test Report

Plant P003-King Creek
 Product 1980-3-Gravel Borrow 4" Minus
 Specification 198-3 9-03.14(1) Gravel Borrow



Sample Information

Sample No 16293057
 Date Sampled 10/23/2021 09:00
 Sampled By RYAN HOGG
 Type Production
 Method Production Cone
 Location AMI Stacker
 Process Washed and Dried (W&D)

Split Sample
 Resample

Test Note
 Also good for KING 5983-3 Gravel Borrow for SEW

Gradation Results

Date Completed 10/23/2021 09:00

Tested By Spencer Letham

Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
lb		12.75	12.31		3.5			
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
8" (200mm)	0.00	0.00	0.0	0.0	100.0			
6" (150mm)	0.00	0.00	0.0	0.0	100.0			
4" (100mm)	0.00	0.00	0.0	0.0	100.0		100-100	
3" (75mm)	0.00	0.00	0.0	0.0	100.0			
2 1/2" (63mm)	0.00	0.00	0.0	0.0	100.0			
2" (50mm)	0.00	0.00	0.0	0.0	100.0		75-100	
1 1/2" (37.5mm)	0.00	0.00	0.0	0.0	100.0			
1" (25mm)	0.74	0.74	5.8	5.8	94.2			
3/4" (19mm)	0.54	1.28	4.2	10.0	90.0			
1/2" (12.5mm)	1.19	2.47	9.3	19.4	80.6			
3/8" (9.5mm)	0.62	3.09	4.9	24.2	75.8			
#4 (4.75mm)	1.25	4.34	9.8	34.0	66.0		50-80	
#10 (2mm)	1.12	5.46	8.8	42.8	57.2			
#40 (.425mm)	3.67	9.13	28.8	71.6	28.4		0-30	
#50 (.3mm)	1.45	10.58	11.4	83.0	17.0			
#100 (.15mm)	1.32	11.90	10.4	93.3	6.7			
#200 (75µm)	0.33	12.23	2.59	95.92	4.08		0-7	
Pan	0.06	12.29	4.08	100.00	0.00			

Other Test Results

Test Name	Date	Result	Unit	Target	Specification	Comment
	Procedure	Lab			Tested By	
SE	10/23/2021 09:00	64	%		Spencer Letham	
	ASTM D2419					

Attachment E-2

Gravel Borrow, Gradation and Proctor Results, HWA GeoSciences, Inc., Project No. 2011-048-23

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



September 17, 2021
HWA Project No. 2011-048-23 Task 11

Shannon & Wilson

400 North 34th Street, Suite 100
Seattle, WA 98103

Attn: Mr. Ryan Peterson, P.E.

Subject: **MATERIALS LABORATORY REPORT**
8801 Remediation
Client Project No.: 103485-008

Dear Mr. Peterson;

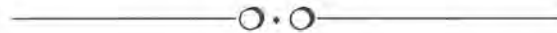
In accordance with your request, HWA GeoSciences Inc. (HWA) performed laboratory testing for the above referenced project. Herein we present the results of our laboratory analyses, which are summarized on the attached Figures. The laboratory testing program was performed in general accordance with your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

SAMPLE DESCRIPTION: One sample of Gravel Borrow was delivered to our laboratory on September 14, 2021 by Shannon & Wilson personnel. The sample was delivered in three large plastic bags designated with the project number, material type, and material source. The bags were recombined before testing, and the sample was designated as AG-1.

PARTICLE SIZE ANALYSIS OF SOILS: The particle size distribution of the specified sample was determined in general accordance with ASTM D6913. The results are plotted on the attached Particle Size Distribution Report, Figure 1.

SAND EQUIVALENT VALUE OF SOILS AND FINE AGGREGATE: The sand equivalent value of the sample was determined in general accordance with ASTM D2419. The results are reported in the "Remarks" section of the Particle Size Distribution Report.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL (PROCTOR TEST): The sample was tested using method ASTM D 1557 (Modified Proctor) Method C. The test was performed on the portion of the sample passing $\frac{3}{4}$ ", 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 4718. The test results are summarized on the Compaction Test Report, Figure 2.



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.

Sincerely,

HWA GEOSCIENCES INC.

Greg Barker
Materials Laboratory Supervisor

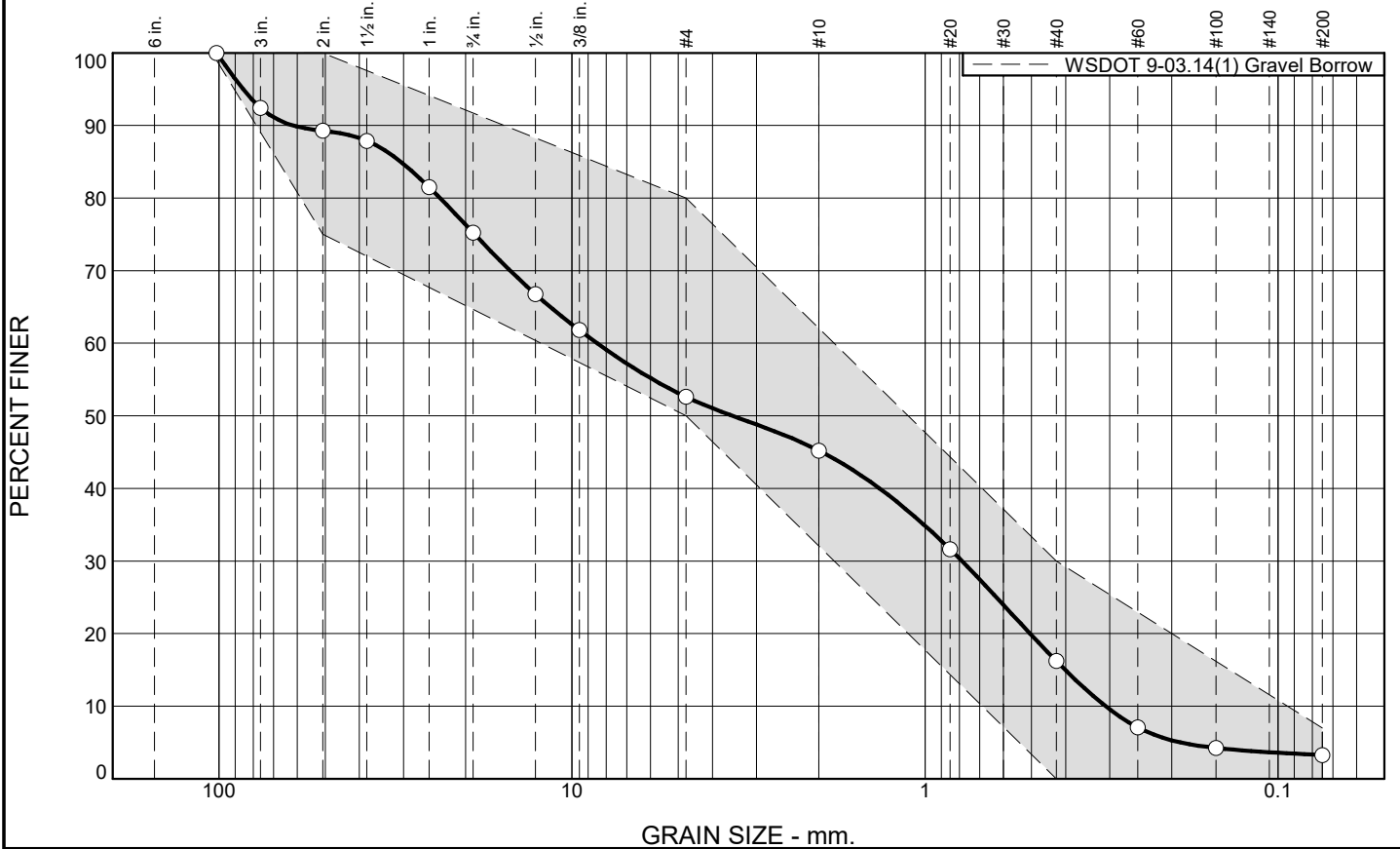
Steven E. Greene, L.G., L.E.G.
Principal Engineering Geologist
Vice President

Attachments:

Figure 1
Figure 2

Particle Size Distribution Report
Compaction Test Report

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
8	17	22	8	29	13	3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
4"	100	99 - 100	
3"	92		
2"	89	75 - 100	
1-1/2"	88		
1"	82		
3/4"	75		
1/2"	67		
3/8"	62	50 - 80	
#4	53		
#10	45		
#20	32		
#40	16	0 - 30	
#60	7		
#100	4		
#200	3.3	0.0 - 7.0	

Material Description

Gravel Borrow
WSDOT 9-03.14(1)

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 61.7623 D₈₅= 30.5676 D₆₀= 8.4826
D₅₀= 3.5106 D₃₀= 0.7868 D₁₅= 0.4009
D₁₀= 0.3080 C_u= 27.54 C_c= 0.24

Classification

USCS= SP AASHTO=

Remarks

Sand Equivalent: 81 (50 min.)

* WSDOT 9-03.14(1) Gravel Borrow

Source of Sample: WA Rock
Sample Number: AG-1

Date: 9/14/2021



Client: Shannon & Wilson
Project: 8801 Remediation
 Client Project No.: 103485-008
Project No: 2011-048 T11

Figure 1

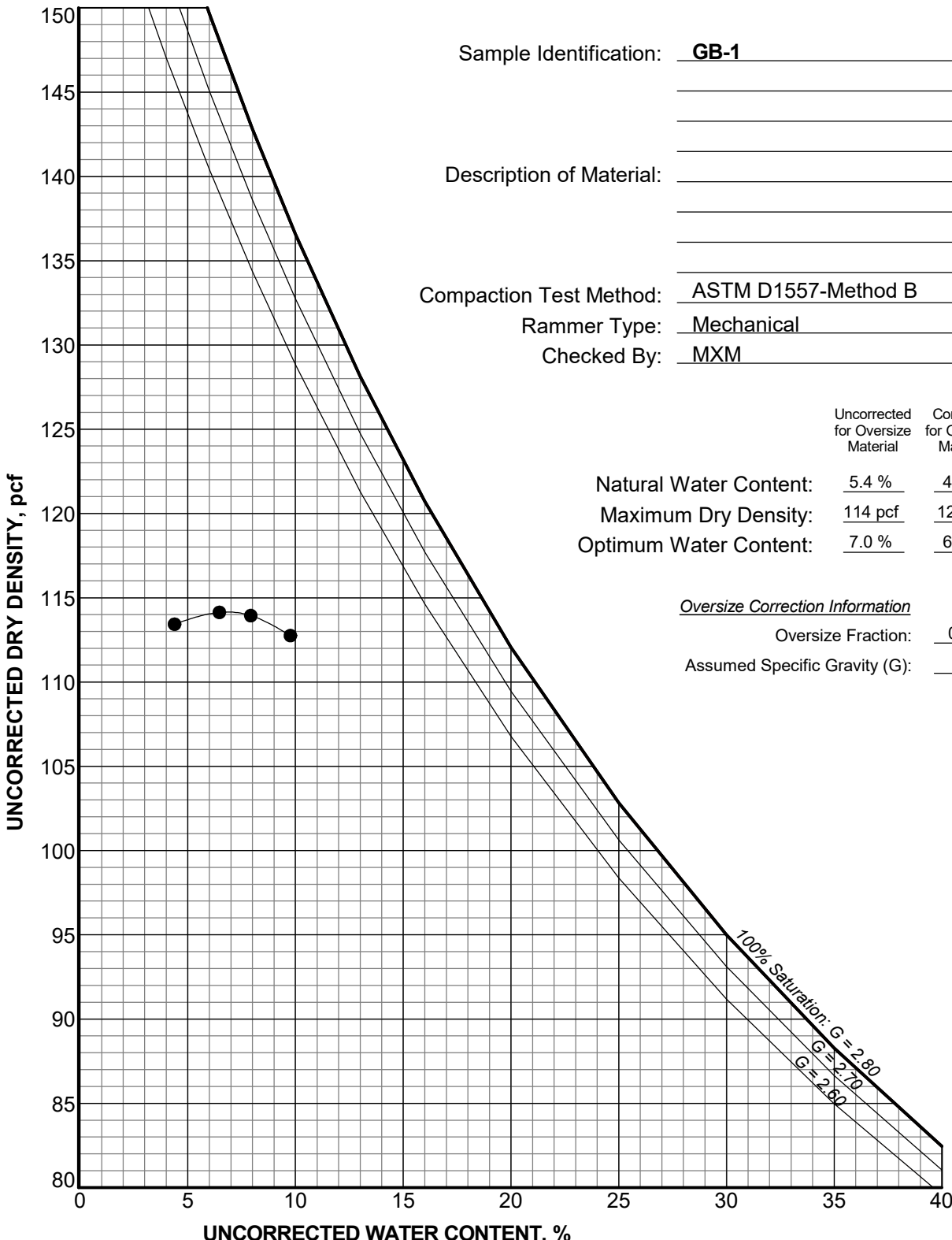
Tested By: AH

Checked By: SEG

Attachment E-3

Gravel Borrow, Proctor Results, Shannon & Wilson, Project No. 103485-001

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



Sample Identification: GB-1

Description of Material: _____

Compaction Test Method: ASTM D1557-Method B

Rammer Type: Mechanical

Checked By: MXM

	Uncorrected for Oversize Material	Corrected for Oversize Material
--	---	---------------------------------------

Natural Water Content: 5.4 % 4.7 %

Maximum Dry Density: 114 pcf 121 pcf

Optimum Water Content: 7.0 % 6.1 %

Overflow Correction Information

Overflow Fraction: 0.17

Assumed Specific Gravity (G): 2.7

DRAFT Compliance Monitoring Report
8801 East Marginal Way
Seattle, Washington

**GRAVEL BORROW
MOISTURE-DENSITY TEST**

September 2022

103485-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

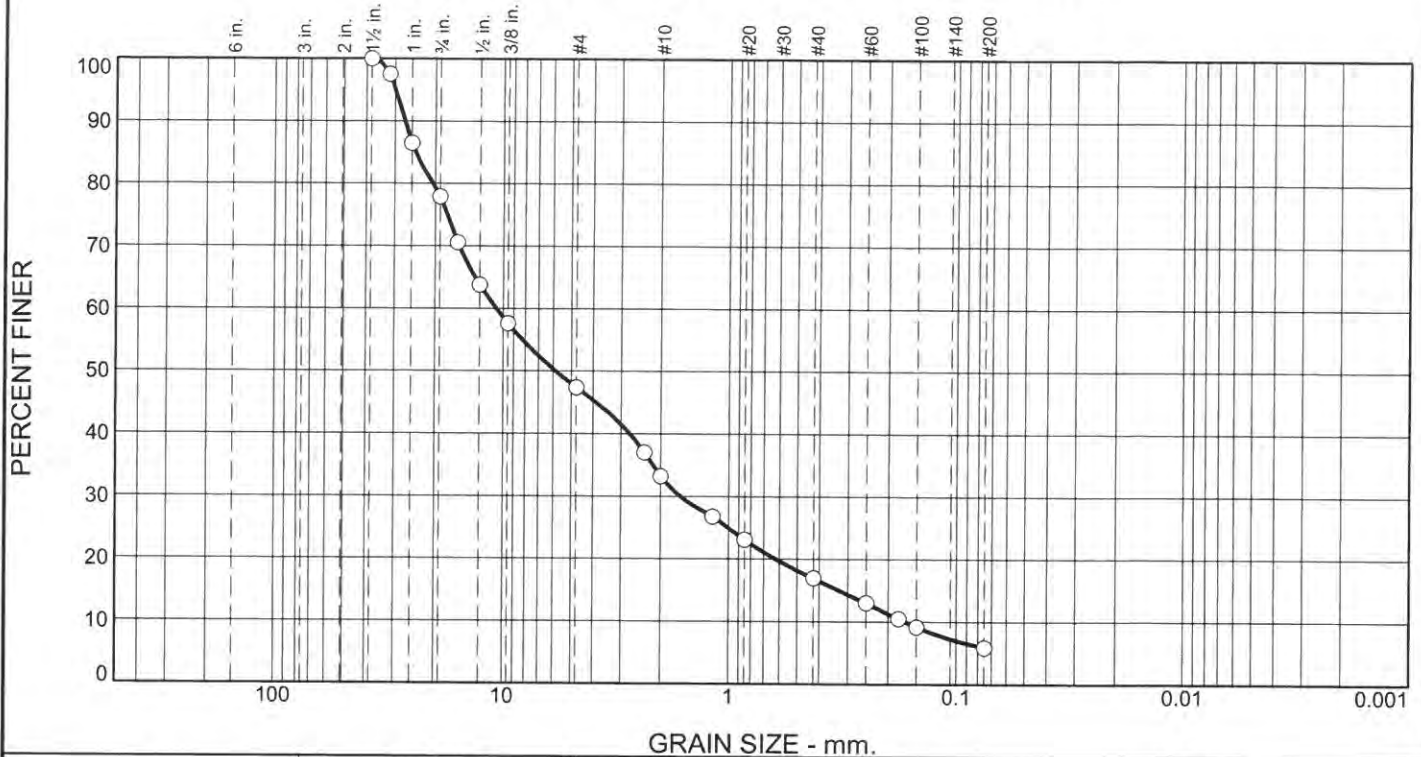
FIG. F-3

Attachment E-4

Gravel Borrow, Gradation and Proctor Results, Krazan & Associates, Inc., Sample Number 21L769

APPENDIX E: IMPORTED FILL, SELECTION, PLACEMENT, AND COMPACTION

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	22	31	14	16	11	6	

Test Results (C-136 & C-117)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100		
1.25	98		
1	86		
.75	78		
.625	71		
.5	64		
.375	58		
#4	47		
#8	37		
#10	33		
#16	27		
#20	23		
#40	17		
#60	13		
#80	11		
#100	9		
#200	5.9		

Material Description

Pit Run.
 Sampled from onsite stockpile.
 Sampled by M.Mundy.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= GW-GM AASHTO (M 145)= A-1-a

Coefficients

D ₉₀ = 27.2340	D ₈₅ = 24.4963	D ₆₀ = 10.7463
D ₅₀ = 5.8593	D ₃₀ = 1.6338	D ₁₅ = 0.3264
D ₁₀ = 0.1681	C _u = 63.94	C _c = 1.48

Remarks

Sample ID: 21L769
 Sample Date: 10-7-21

Date Received: 10-8-21 **Date Tested:** 10-8-21

Tested By: I.Teriong

Checked By: M.Thomas *[Signature]*

Title: Material Laboratory Manager

* (no specification provided)

Source of Sample: Washington Rock Quarries King Creek Pit
Sample Number: 21L769

Date Sampled: 10-7-21

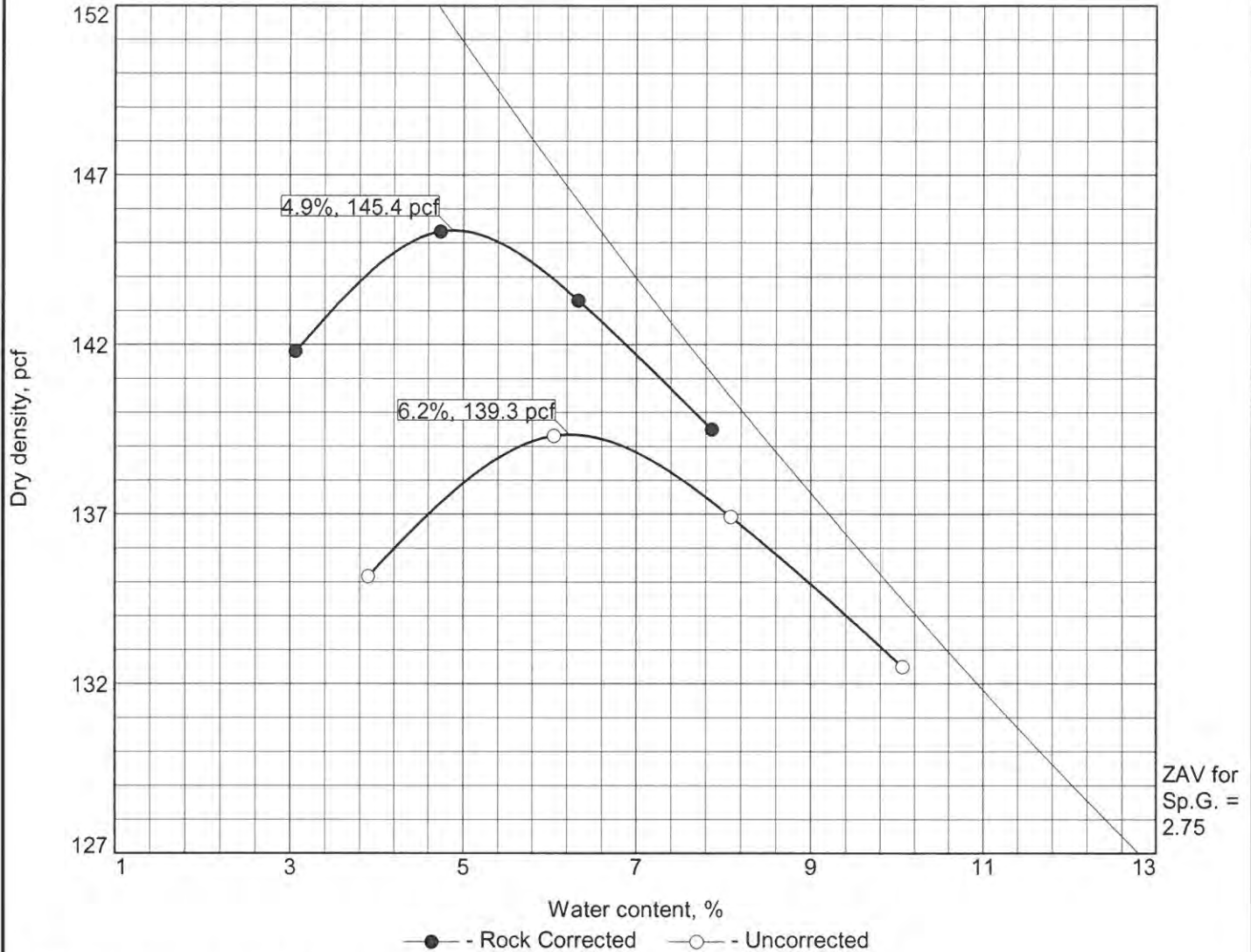


Client: Anderson Environmental Contracting, LLC
Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila

Project No: 066-21314

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 1557 Method C Modified
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	GW-GM	A-1-a	-	2.75	NV	NP	22	5.9

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 145.4 pcf	139.3 pcf	Pit Run. Sampled from onsite stockpile. Sampled by M.Mundy.
Optimum moisture = 4.9 %	6.2 %	

Project No. 066-21314 Client: Anderson Environmental Contracting, LLC Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila Source: Washington Rock Quarries King Creek Pit Sample No.: 21L769	Remarks: Sample ID:21L769 Sample Date:10-7-21
--	--



Figure

Tested By: I.Teriong

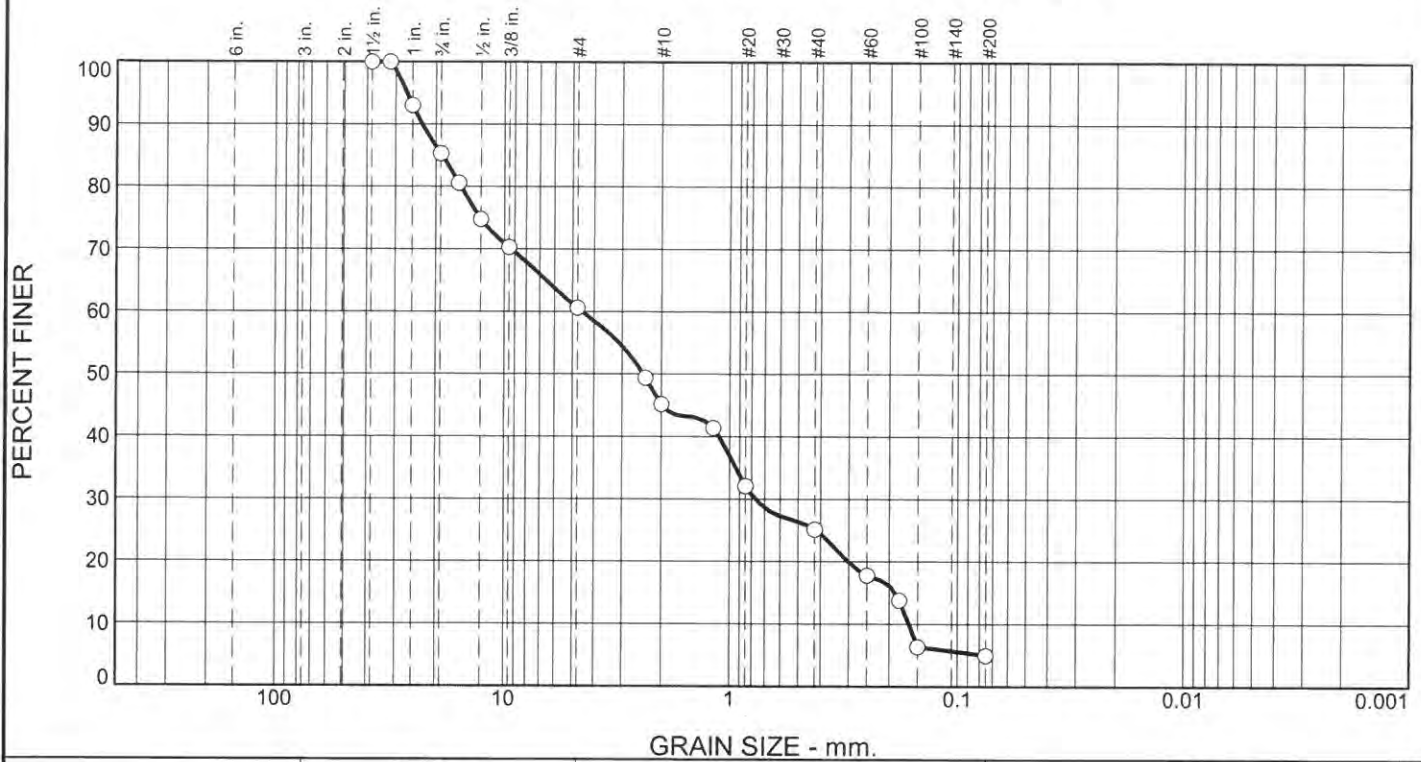
Checked By: M.Thomas *[Signature]*

Attachment E-5

Gravel Borrow, Gradation and Proctor Results, Krazan & Associates, Inc., Sample Number 21L779

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	15	24	16	20	20	5	

Test Results (C-136 & C-117)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100		
1.25	100		
1	93		
.75	85		
.625	81		
.5	75		
.375	70		
#4	61		
#8	49		
#10	45		
#16	41		
#20	32		
#40	25		
#60	18		
#80	14		
#100	6		
#200	5.0		

* (no specification provided)

Material Description

Pit Run.
Sampled from compacted fill placed onsite.
Sampled by M.Mundy.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-1-a

Coefficients

D₉₀= 23.0339 D₈₅= 18.8318 D₆₀= 4.5293
D₅₀= 2.4150 D₃₀= 0.7697 D₁₅= 0.1877
D₁₀= 0.1635 C_u= 27.70 C_c= 0.80

Remarks

Sample ID: 21L779
Sample Date: 10-11-21

Date Received: 10-11-21 **Date Tested:** 10-12-21
Tested By: I.Teriong
Checked By: M.Thomas *[Signature]*
Title: Material Laboratory Manager

Source of Sample: Washington Rock Quarries King Creek Pit
Sample Number: 21L779

Date Sampled: 10-11-21

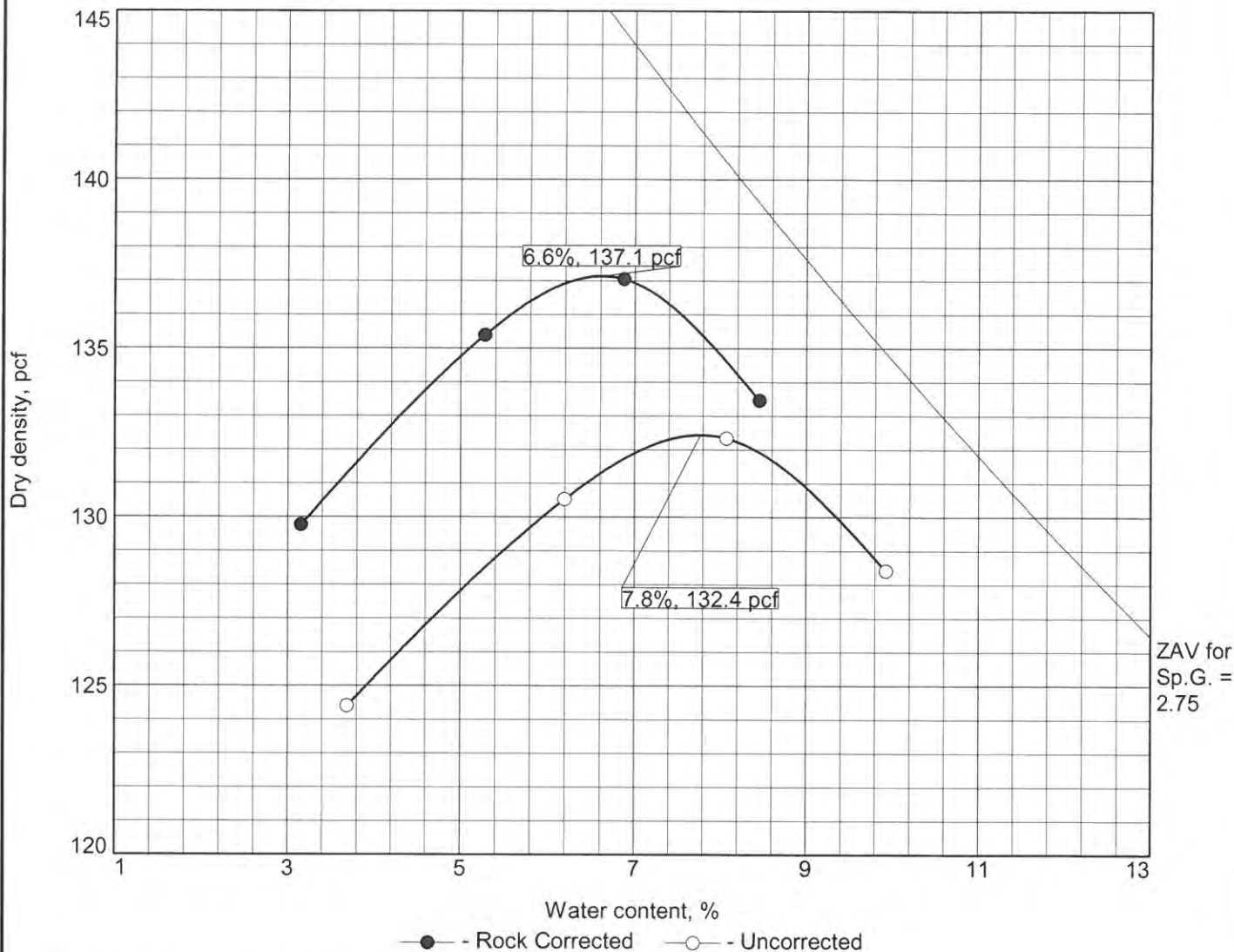


Client: Anderson Environmental Contracting, LLC
Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila

Project No: 066-21314

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 1557 Method C Modified
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	SP-SM	A-1-a	-	2.75	NV	NP	15	5.0

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 137.1 pcf	132.4 pcf	Pit Run. Sampled from compacted fill placed onsite. Sampled by M.Mundy.
Optimum moisture = 6.6 %	7.8 %	

Project No. 066-21314 **Client:** Anderson Environmental Contracting, LLC
Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila
 ○ **Source:** Washington Rock Quarries King Creek Pit **Sample No.:** 21L779

Remarks:
 Sample ID: 21L779
 Sample Date: 10-11-21



Figure

Tested By: I.Teriong

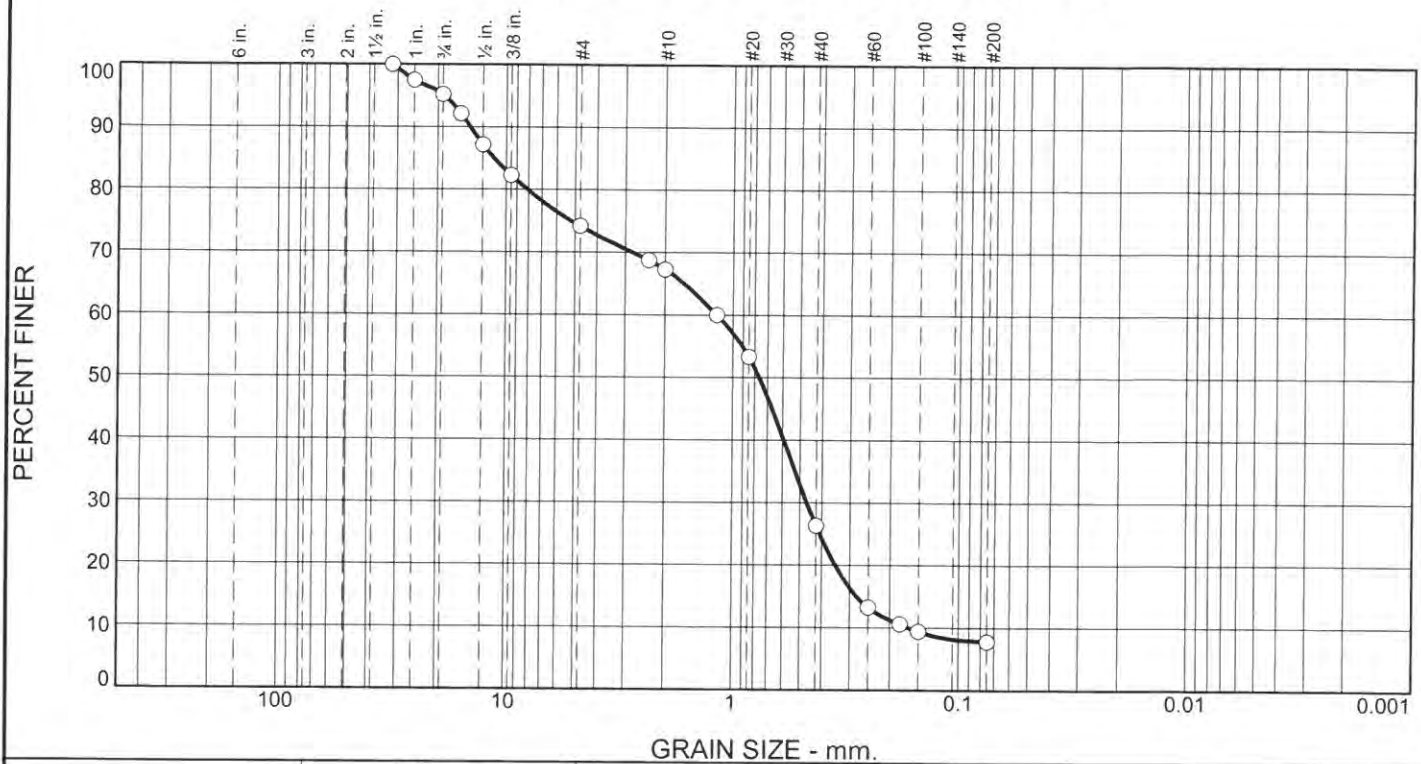
Checked By: M.Thomas

Attachment E-6

Gravel Borrow, Gradation and Proctor Results, Krazan & Associates, Inc., Sample Number 22L573

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0	5	21	7	41	18	8

Test Results (ASTM C-136 & ASTM C-117)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1 1/4"	100		
1"	97		
3/4"	95		
5/8"	92		
1/2"	87		
3/8"	82		
#4	74		
#8	69		
#10	67		
#16	60		
#20	53		
#40	26		
#60	13		
#80	11		
#100	9		
#200	7.8		

* (no specification provided)

Material Description

Brown well-graded SAND with silt and gravel.
 Sampled onsite.
 Sampled by the client.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SW-SM AASHTO (M 145)= A-1-b

Coefficients

D ₉₀ = 14.4225	D ₈₅ = 11.3517	D ₆₀ = 1.1758
D ₅₀ = 0.7640	D ₃₀ = 0.4675	D ₁₅ = 0.2797
D ₁₀ = 0.1644	C _u = 7.15	C _c = 1.13

Remarks

Sample ID: 22L573
 Sample date: 7/28/22

Date Received: 8/1/22 Date Tested: 8/2/22
 Tested By: I. Teriong
 Checked By: M. Thomas *[Signature]*
 Title: Material Laboratory Manager

Source of Sample: Onsite
 Sample Number: 22L573

Date Sampled: 7/28/22

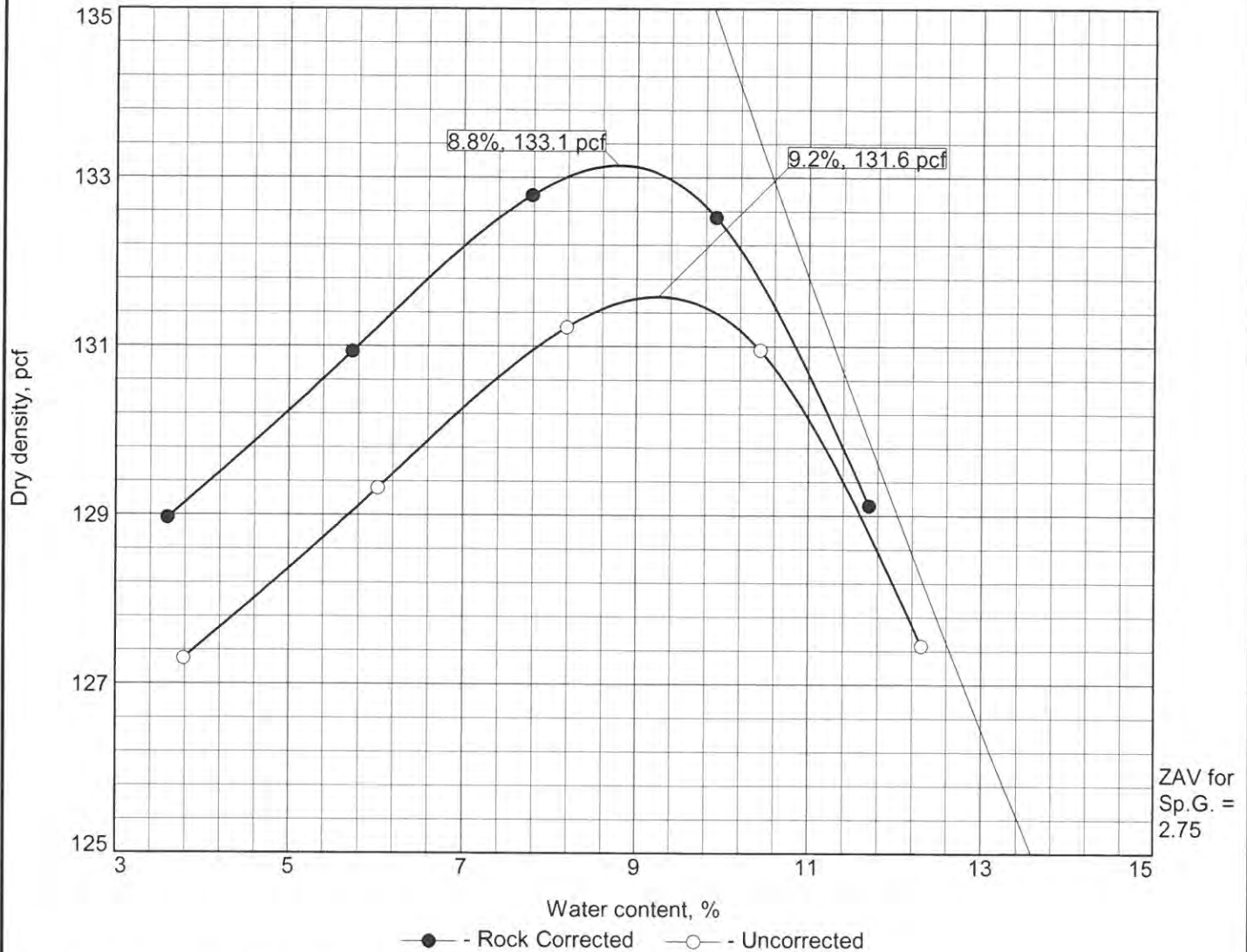


Client: Anderson Environmental Contracting, LLC
 Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila

Project No: 066-21314

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 1557 Method C Modified
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	SW-SM	A-1-b	-	2.75	NV	NP	5	7.8

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 133.1 pcf	131.6 pcf	Brown well-graded SAND with silt and gravel. Sampled onsite.
Optimum moisture = 8.8 %	9.2 %	

Project No. 066-21314 **Client:** Anderson Environmental Contracting, LLC
Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila

Remarks:
 Sample ID: 22L573
 Sample Date: 7-28-22

○ **Source of Sample:** Onsite **Sample Number:** 22L573



Figure

Tested By: I.Teriong

Checked By: M.Thomas *[Signature]*

VL

Attachment E-7

Gravel Borrow, Chemical Results, Fremont Analytical, Inc., Work Order No. 2109200

APPENDIX E: IMPORTED FILL, SELECTION, PLACEMENT, AND COMPACTION



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

Shannon & Wilson

Meg Strong
400 N. 34th Street, Suite 100
Seattle, WA 98103

RE: 8801 - Excavations
Work Order Number: 2109200

September 17, 2021

Attention Meg Strong:

Fremont Analytical, Inc. received 1 sample(s) on 9/14/2021 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Polychlorinated Biphenyls (PCB) by EPA 8082
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

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Revision v1



CLIENT: Shannon & Wilson
Project: 8801 - Excavations
Work Order: 2109200

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2109200-001	Gravel Borrow - WA Rock	09/14/2021 3:00 PM	09/14/2021 3:53 PM

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

CLIENT: Shannon & Wilson

Project: 8801 - Excavations

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.

Prep Comments for METHOD (PREP-PCB-S), SAMPLE (2109200-001A) required Acid Cleanup Procedure (Using Method No 3665A).

Prep Comments for METHOD (PREP-PCB-S), SAMPLE (2109200-001A) required Florisil Cleanup Procedure (Using Method No 3620C).

Qualifiers:

- * - Associated LCS is outside of 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 Method Detection 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: 2109200
Date Reported: 9/17/2021

Client: Shannon & Wilson
Project: 8801 - Excavations
Lab ID: 2109200-001

Collection Date: 9/14/2021 3:00:00 PM

Matrix: Soil

Client Sample ID: Gravel Borrow - WA Rock

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
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Polychlorinated Biphenyls (PCB) by EPA 8082

Batch ID: 33704 Analyst: SB

Aroclor 1016	ND	0.0491	0.00791		mg/Kg-dry	1	09/15/21 13:53:36
Aroclor 1221	ND	0.0491	0.00791		mg/Kg-dry	1	09/15/21 13:53:36
Aroclor 1232	ND	0.0491	0.00791		mg/Kg-dry	1	09/15/21 13:53:36
Aroclor 1242	ND	0.0491	0.00791		mg/Kg-dry	1	09/15/21 13:53:36
Aroclor 1248	ND	0.0491	0.00976		mg/Kg-dry	1	09/15/21 13:53:36
Aroclor 1254	ND	0.0491	0.00976		mg/Kg-dry	1	09/15/21 13:53:36
Aroclor 1260	ND	0.0491	0.00976		mg/Kg-dry	1	09/15/21 13:53:36
Aroclor 1262	ND	0.0491	0.00976		mg/Kg-dry	1	09/15/21 13:53:36
Aroclor 1268	ND	0.0491	0.00976		mg/Kg-dry	1	09/15/21 13:53:36
Total PCBs	ND	0.0491	0.00976		mg/Kg-dry	1	09/15/21 13:53:36
Surr: Decachlorobiphenyl	104	20.6 - 142			%Rec	1	09/15/21 13:53:36
Surr: Tetrachloro-m-xylene	117	22 - 157			%Rec	1	09/15/21 13:53:36

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 33703 Analyst: MM

Diesel (Fuel Oil)	ND	46.5	10.5		mg/Kg-dry	1	09/15/21 17:37:50
Heavy Oil	ND	93.1	20.3		mg/Kg-dry	1	09/15/21 17:37:50
Total Petroleum Hydrocarbons	36.3	140	30.8	J	mg/Kg-dry	1	09/15/21 17:37:50
Surr: 2-Fluorobiphenyl	79.4	50 - 150			%Rec	1	09/15/21 17:37:50
Surr: o-Terphenyl	92.3	50 - 150			%Rec	1	09/15/21 17:37:50

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 33705 Analyst: SB

Benz(a)anthracene	ND	20.2	2.54		µg/Kg-dry	1	09/15/21 15:33:14
Chrysene	ND	40.4	7.32		µg/Kg-dry	1	09/15/21 15:33:14
Benzo(b)fluoranthene	ND	20.2	2.18		µg/Kg-dry	1	09/15/21 15:33:14
Benzo(k)fluoranthene	ND	20.2	2.73		µg/Kg-dry	1	09/15/21 15:33:14
Benzo(a)pyrene	ND	20.2	2.27		µg/Kg-dry	1	09/15/21 15:33:14
Indeno(1,2,3-cd)pyrene	ND	40.4	7.21		µg/Kg-dry	1	09/15/21 15:33:14
Dibenz(a,h)anthracene	ND	40.4	8.83		µg/Kg-dry	1	09/15/21 15:33:14
Surr: 2-Fluorobiphenyl	66.6	27.9 - 129			%Rec	1	09/15/21 15:33:14
Surr: Terphenyl-d14 (surr)	86.0	39.1 - 145	0		%Rec	1	09/15/21 15:33:14



Client: Shannon & Wilson

Collection Date: 9/14/2021 3:00:00 PM

Project: 8801 - Excavations

Lab ID: 2109200-001

Matrix: Soil

Client Sample ID: Gravel Borrow - WA Rock

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
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Gasoline by NWTPH-Gx

Batch ID: 33708 Analyst: KT

Gasoline	ND	6.77	2.70		mg/Kg-dry	1	09/15/21 17:06:54
Surr: Toluene-d8	97.2	65 - 135			%Rec	1	09/15/21 17:06:54
Surr: 4-Bromofluorobenzene	88.2	65 - 135			%Rec	1	09/15/21 17:06:54

Total Metals by EPA Method 6020B

Batch ID: 33716 Analyst: EH

Arsenic	4.20	0.0990	0.0332		mg/Kg-dry	1	09/16/21 17:49:17
Copper	22.4	0.825	0.154		mg/Kg-dry	1	09/16/21 17:49:17
Lead	2.70	0.165	0.0343		mg/Kg-dry	1	09/16/21 17:49:17

Sample Moisture (Percent Moisture)

Batch ID: R69911 Analyst: KJ

Percent Moisture	3.02	0.500	0.100		wt%	1	09/15/21 8:01:49
------------------	------	-------	-------	--	-----	---	------------------

Work Order: 2109200
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: MB-33716	SampType: MBLK	Units: mg/Kg	Prep Date: 9/16/2021	RunNo: 69965							
Client ID: MBLKS	Batch ID: 33716	Analysis Date: 9/16/2021	SeqNo: 1418604								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	0.0952									
Copper	0.165	0.794									J
Lead	ND	0.159									

Sample ID: LCS-33716	SampType: LCS	Units: mg/Kg	Prep Date: 9/16/2021	RunNo: 69965							
Client ID: LCSS	Batch ID: 33716	Analysis Date: 9/16/2021	SeqNo: 1418605								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	36.7	0.0909	37.88	0	96.8	80	120				
Copper	36.5	0.758	37.88	0	96.4	80	120				
Lead	20.3	0.152	18.94	0	107	80	120				

Sample ID: 2109200-001AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/16/2021	RunNo: 69965							
Client ID: Gravel Borrow - WA Ro	Batch ID: 33716	Analysis Date: 9/16/2021	SeqNo: 1418610								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	44.6	0.101	41.92	4.201	96.4	75	125				
Copper	57.1	0.838	41.92	22.44	82.6	75	125				
Lead	21.2	0.168	20.96	2.700	88.2	75	125				

Sample ID: 2109200-001AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/16/2021	RunNo: 69965							
Client ID: Gravel Borrow - WA Ro	Batch ID: 33716	Analysis Date: 9/16/2021	SeqNo: 1418611								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	47.8	0.0990	41.25	4.201	106	75	125	44.61	6.82	20	
Copper	61.1	0.825	41.25	22.44	93.8	75	125	57.08	6.83	20	
Lead	22.3	0.165	20.62	2.700	95.1	75	125	21.19	5.15	20	

Work Order: 2109200
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: MB-33703	SampType: MBLK	Units: mg/Kg				Prep Date: 9/15/2021	RunNo: 69956				
Client ID: MBLKS	Batch ID: 33703					Analysis Date: 9/15/2021	SeqNo: 1418260				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	27.7	100									J
Total Petroleum Hydrocarbons	ND	150									
Surr: 2-Fluorobiphenyl	8.45		10.00		84.5	50	150				
Surr: o-Terphenyl	9.77		10.00		97.7	50	150				

Sample ID: LCS-33703	SampType: LCS	Units: mg/Kg				Prep Date: 9/15/2021	RunNo: 69956				
Client ID: LCSS	Batch ID: 33703					Analysis Date: 9/15/2021	SeqNo: 1418261				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Petroleum Hydrocarbons	595	150	500.0	0	119	77.2	122				
Surr: 2-Fluorobiphenyl	11.4		10.00		114	50	150				
Surr: o-Terphenyl	14.4		10.00		145	50	150				

Sample ID: 2109206-001AMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 9/15/2021	RunNo: 69956				
Client ID: BATCH	Batch ID: 33703					Analysis Date: 9/15/2021	SeqNo: 1418294				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Petroleum Hydrocarbons	1,340	164	546.0	628.9	131	68	132				
Surr: 2-Fluorobiphenyl	10.6		10.92		96.8	50	150				
Surr: o-Terphenyl	14.3		10.92		131	50	150				

Sample ID: 2109206-001AMSD	SampType: MSD	Units: mg/Kg-dry				Prep Date: 9/15/2021	RunNo: 69956				
Client ID: BATCH	Batch ID: 33703					Analysis Date: 9/15/2021	SeqNo: 1418265				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Petroleum Hydrocarbons	1,080	160	532.3	628.9	85.0	68	132	1,342	21.5	30	
Surr: 2-Fluorobiphenyl	18.4		21.29		86.4	50	150		0		
Surr: o-Terphenyl	21.7		21.29		102	50	150		0		

Work Order: 2109200
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: 2109206-001AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/15/2021	RunNo: 69956							
Client ID: BATCH	Batch ID: 33703	Analysis Date: 9/15/2021	SeqNo: 1418265								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 2109208-008ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/15/2021	RunNo: 69956							
Client ID: BATCH	Batch ID: 33703	Analysis Date: 9/15/2021	SeqNo: 1418282								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	52.0						0	0	30	
Heavy Oil	ND	104						0	0	30	
Total Petroleum Hydrocarbons	ND	156						0	0	30	
Surr: 2-Fluorobiphenyl	9.07		10.41		87.2	50	150		0		
Surr: o-Terphenyl	10.2		10.41		97.8	50	150		0		

Work Order: 2109200
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: MB-33705	SampType: MBLK	Units: µg/Kg			Prep Date: 9/15/2021	RunNo: 69942					
Client ID: MBLKS	Batch ID: 33705				Analysis Date: 9/15/2021	SeqNo: 1417972					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	20.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	20.0									
Benzo(k)fluoranthene	ND	20.0									
Benzo(a)pyrene	ND	20.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Surr: 2-Fluorobiphenyl	700		1,000		70.0	27.9	129				
Surr: Terphenyl-d14 (surr)	886		1,000		88.6	39.1	145				

Sample ID: LCS-33705	SampType: LCS	Units: µg/Kg			Prep Date: 9/15/2021	RunNo: 69942					
Client ID: LCSS	Batch ID: 33705				Analysis Date: 9/15/2021	SeqNo: 1417973					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1,890	20.0	2,000	0	94.5	64.4	113				
Chrysene	1,700	40.0	2,000	0	84.8	57.3	113				
Benzo(b)fluoranthene	1,780	20.0	2,000	0	89.2	58.2	115				
Benzo(k)fluoranthene	1,730	20.0	2,000	0	86.7	53.4	121				
Benzo(a)pyrene	1,870	20.0	2,000	0	93.7	64.7	125				
Indeno(1,2,3-cd)pyrene	1,570	40.0	2,000	0	78.4	61.6	113				
Dibenz(a,h)anthracene	1,650	40.0	2,000	0	82.7	62.1	116				
Surr: 2-Fluorobiphenyl	719		1,000		71.9	27.9	129				
Surr: Terphenyl-d14 (surr)	898		1,000		89.8	39.1	145				

Sample ID: LCSD-33705	SampType: LCSD	Units: µg/Kg			Prep Date: 9/15/2021	RunNo: 69942					
Client ID: LCSS02	Batch ID: 33705				Analysis Date: 9/15/2021	SeqNo: 1417975					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1,850	20.0	2,000	0	92.5	64.4	113	1,890	2.16	30	

Work Order: 2109200
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chrysene	1,680	40.0	2,000	0	83.9	57.3	113	1,695	1.07	30	
Benzo(b)fluoranthene	1,620	20.0	2,000	0	80.9	58.2	115	1,783	9.70	30	
Benzo(k)fluoranthene	1,880	20.0	2,000	0	94.2	53.4	121	1,735	8.27	30	
Benzo(a)pyrene	1,830	20.0	2,000	0	91.6	64.7	125	1,874	2.29	30	
Indeno(1,2,3-cd)pyrene	1,570	40.0	2,000	0	78.3	61.6	113	1,568	0.102	30	
Dibenz(a,h)anthracene	1,660	40.0	2,000	0	83.0	62.1	116	1,655	0.266	30	
Surr: 2-Fluorobiphenyl	713		1,000		71.3	27.9	129		0		
Surr: Terphenyl-d14 (surr)	852		1,000		85.2	39.1	145		0		

Work Order: 2109200
 CLIENT: Shannon & Wilson
 Project: 8801 - Excavations

QC SUMMARY REPORT
Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: MB-33704	SampType: MBLK	Units: mg/Kg				Prep Date: 9/15/2021	RunNo: 69946				
Client ID: MBLKS	Batch ID: 33704					Analysis Date: 9/15/2021	SeqNo: 1418048				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0500									
Aroclor 1221	ND	0.0500									
Aroclor 1232	ND	0.0500									
Aroclor 1242	ND	0.0500									
Aroclor 1248	ND	0.0500									
Aroclor 1254	ND	0.0500									
Aroclor 1260	ND	0.0500									
Aroclor 1262	ND	0.0500									
Aroclor 1268	ND	0.0500									
Total PCBs	ND	0.0500									
Surr: Decachlorobiphenyl	166		200.0		83.2	20.6	142				
Surr: Tetrachloro-m-xylene	195		200.0		97.3	22	157				

Sample ID: LCS1-33704	SampType: LCS	Units: mg/Kg				Prep Date: 9/15/2021	RunNo: 69946				
Client ID: LCSS	Batch ID: 33704					Analysis Date: 9/15/2021	SeqNo: 1418049				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.913	0.0500	1.000	0	91.3	52.2	136				
Aroclor 1260	1.01	0.0500	1.000	0	101	50.5	150				
Surr: Decachlorobiphenyl	196		200.0		97.8	20.6	142				
Surr: Tetrachloro-m-xylene	230		200.0		115	22	157				

Sample ID: LCS2-33704	SampType: LCS	Units: mg/Kg				Prep Date: 9/15/2021	RunNo: 69946				
Client ID: LCSS	Batch ID: 33704					Analysis Date: 9/15/2021	SeqNo: 1418050				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1254	1.09	0.0500	1.000	0	109	48.1	147				
Surr: Decachlorobiphenyl	225		200.0		113	20.6	142				
Surr: Tetrachloro-m-xylene	246		200.0		123	22	157				

Work Order: 2109200
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT
Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: LCS2-33704	SampType: LCS	Units: mg/Kg	Prep Date: 9/15/2021	RunNo: 69946							
Client ID: LCSS	Batch ID: 33704	Analysis Date: 9/15/2021	SeqNo: 1418050								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LCS1D-33704	SampType: LCSD	Units: mg/Kg	Prep Date: 9/15/2021	RunNo: 69946							
Client ID: LCSS02	Batch ID: 33704	Analysis Date: 9/15/2021	SeqNo: 1418052								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.956	0.0500	1.000	0	95.6	52.2	136	0.9129	4.59	20	
Aroclor 1260	1.04	0.0500	1.000	0	104	50.5	150	1.012	3.11	20	
Surr: Decachlorobiphenyl	201		200.0		101	20.6	142		0		
Surr: Tetrachloro-m-xylene	236		200.0		118	22	157		0		

Work Order: 2109200
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID: LCS-33708	SampType: LCS	Units: mg/Kg				Prep Date: 9/15/2021	RunNo: 69954				
Client ID: LCSS	Batch ID: 33708					Analysis Date: 9/15/2021	SeqNo: 1418255				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	27.9	5.00	25.00	0	112	65	135				
Surr: Toluene-d8	1.28		1.250		102	65	135				
Surr: 4-Bromofluorobenzene	1.29		1.250		104	65	135				

Sample ID: MB-33708	SampType: MBLK	Units: mg/Kg				Prep Date: 9/15/2021	RunNo: 69954				
Client ID: MBLKS	Batch ID: 33708					Analysis Date: 9/15/2021	SeqNo: 1418256				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.00									
Surr: Toluene-d8	1.22		1.250		97.9	65	135				
Surr: 4-Bromofluorobenzene	1.12		1.250		89.9	65	135				

Sample ID: 2109200-001BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 9/15/2021	RunNo: 69954				
Client ID: Gravel Borrow - WA Ro	Batch ID: 33708					Analysis Date: 9/15/2021	SeqNo: 1418243				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	6.77						0	0	30	
Surr: Toluene-d8	1.66		1.692		98.1	65	135		0		
Surr: 4-Bromofluorobenzene	1.52		1.692		89.8	65	135		0		

Sample ID: 2109211-003BMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 9/15/2021	RunNo: 69954				
Client ID: BATCH	Batch ID: 33708					Analysis Date: 9/15/2021	SeqNo: 1418249				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	17.6	4.08	20.42	2.090	75.9	65	135				
Surr: Toluene-d8	1.02		1.021		100	65	135				
Surr: 4-Bromofluorobenzene	1.05		1.021		103	65	135				

Client Name: SW	Work Order Number: 2109200
Logged by: Clare Griggs	Date Received: 9/14/2021 3:53:00 PM

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
- Unknown prior to receipt.**
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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	20.5

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



Fremont
ANALYTICAL

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 9/14/2021 Page: 1 of 1

Project Name: 8801 - Excavations

Project No: 103485-008

Collected by: Ryan Peterson

Location: Orting, WA

Report To (PM): Meg Strong

PM Email: MJS@shanwil.com

Laboratory Project No (Internal): 2109200

Special Remarks:

Sample Disposal: Return to client Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DW)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)**	EDB (8011)	Comments
1 Gravel Borrow - WA Rock	9/14/21	1500	Soil		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al(As) B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Tl Tl V Zn

**Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature) *[Signature]* Print Name *Ryan Peterson* Date/Time *9/14/21 15:40*
 Relinquished (Signature) *[Signature]* Print Name *Alexandra Tricio* Date/Time *09/14/21 15:53*

Turn-around Time:
 3 Day Next Day
 2 PMO Same Day (specify)

Attachment E-8

Gravel Borrow, Chemical Results, ALS Environmental, Request No. K2198871

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

September 02, 2021

Analytical Report for Service Request No: K2109971

Craig Nelson
Anderson Environmental Contracting
705 Colorado Street
Kelso, WA 98626

RE: Paccar

Dear Craig,

Enclosed are the results of the sample(s) submitted to our laboratory August 26, 2021
For your reference, these analyses have been assigned our service request number **K2109971**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Luke Rahn
Project Manager



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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Chain of Custody

Subcontract Lab Results

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
 - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



CHAIN OF CUSTODY

SR# 12109971

1317 South 13th Ave., Kelso, WA 98626 | +1 360 577 7222 | +1 800 695 7222 | +1 360 636 1068 (fax)

PAGE _____ OF _____ COC# _____

PROJECT NAME <u>Paccar</u>					
PROJECT NUMBER <u>1</u>					
PROJECT MANAGER <u>Craig Nelson</u>					
COMPANY NAME <u>AEC</u>					
ADDRESS <u>705 Colorado St.</u>					
CITY/STATE/ZIP <u>Kelso, WA 98626</u>					
E-MAIL ADDRESS <u>Craig@Aec/LLC.net</u>					
PHONE # <u>208-340-6419</u> FAX # _____					
SAMPLER'S SIGNATURE <u>Craig Nelson</u>					
NUMBER OF CONTAINERS					
<input type="checkbox"/> Semivolatile Organics by GC/MS 625 <input type="checkbox"/> 8270 <input type="checkbox"/> 8270LL <input type="checkbox"/> SIM PAH <input type="checkbox"/> <input type="checkbox"/> Volatile Organics 624 <input type="checkbox"/> 8260 <input type="checkbox"/> 8021 <input type="checkbox"/> BTEX <input type="checkbox"/> <input type="checkbox"/> Gas <input type="checkbox"/> Hydrocarbons (*see below) <input type="checkbox"/> Oil & Grease/TRPH <input type="checkbox"/> Diesel <input type="checkbox"/> Oil <input type="checkbox"/> 1664 <input type="checkbox"/> 1664 SGT <input type="checkbox"/> <input type="checkbox"/> PCBs <input type="checkbox"/> Aroclors <input type="checkbox"/> Congeners <input type="checkbox"/> 608 <input type="checkbox"/> 808 <input type="checkbox"/> Pesticides/Herbicides <input type="checkbox"/> <input type="checkbox"/> Chlorophenolics - 8141 <input type="checkbox"/> 8151 <input type="checkbox"/> <input type="checkbox"/> Tri <input type="checkbox"/> Tetra <input type="checkbox"/> Metals, Total or Dissolved (See List below) PCP <input type="checkbox"/> <input type="checkbox"/> Cyanide <input type="checkbox"/> Hex-Chrom <input type="checkbox"/> (circle) pH, Cond., Cl, SO ₄ , PO ₄ , F, NO ₂ , NO ₃ , BOD, TSS, TDS, Turb. (circle) NH ₃ -N, COD, TKN, TOC, DOC, NO ₂ +NO ₃ , T-Phos TOX 9020 <input type="checkbox"/> AOX 1650 <input type="checkbox"/> 506 <input type="checkbox"/> Alkalinity <input type="checkbox"/> CO ₃ <input type="checkbox"/> HCO ₃ <input type="checkbox"/> Dioxins/Furans 1613 <input type="checkbox"/> 8290 <input type="checkbox"/> Dissolved Gases RSK 175 <input type="checkbox"/> Methane <input type="checkbox"/> Ethane <input type="checkbox"/> Ethene <input type="checkbox"/> <input type="checkbox"/> CO ₂ <input type="checkbox"/> Ethane <input type="checkbox"/> Ethene <input type="checkbox"/>					
SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	REMARKS
<u>1</u>	<u>8-26</u>	<u>11:27</u>	<u>Kelso</u>	<u>1</u>	

REPORT REQUIREMENTS <input checked="" type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input type="checkbox"/> IV. Data Validation Report <input type="checkbox"/> V. EDD	INVOICE INFORMATION P.O. # _____ Bill To: _____ _____ _____	Circle which metals are to be analyzed: Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
	TURNAROUND REQUIREMENTS <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 5 day <input type="checkbox"/> Standard (15 working days) <input type="checkbox"/> Provide FAX Results Requested Report Date _____	*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE) SPECIAL INSTRUCTIONS/COMMENTS: <input type="checkbox"/> Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY: <u>Craig Nelson</u> Signature: _____ Date/Time: <u>8-26-21 11:27</u> Printed Name: <u>Craig Nelson</u> Firm: <u>AEC</u>	RECEIVED BY: <u>[Signature]</u> Signature: _____ Date/Time: <u>8/26/21 11:27</u> Printed Name: _____ Firm: _____	RELINQUISHED BY: Signature: _____ Date/Time: _____ Printed Name: _____ Firm: _____	RECEIVED BY: Signature: _____ Date/Time: _____ Printed Name: _____ Firm: _____
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V2109971

13.1(5) Quarry Spall, and shall be free from roots and other organic matter, trash, contamination, debris, concrete, recycled material, snow, ice or frozen materials.

- E. One sample of material per backfill/bedding material source shall be collected and tested for chemical parameters at a frequency of once per 5,000 tons. The chemical parameters are listed below.

Chemical Parameter	Test Frequency	Criteria
Polychlorinated biphenyls (PCBs)	One per source	Non-detect at less than 0.1 milligrams per kilogram (mg/kg)
Total Petroleum Hydrocarbons (TPH)	One per source	Non-detect
Carcinogenic polycyclic aromatic hydrocarbons (cPAHs)	One per source	Below 0.001 mg/kg
Lead	One per source	Below 250 mg/kg
Arsenic	One per source	Below 7.3 mg/kg
Copper	One per source	Below 36 mg/kg

- F. The SVE screens, AS conduits, and adjacent gravel bedding material will be wrapped in a nonwoven geotextile to limit introduction of fines into the SVE screens. The geotextile will be Mirafi® 140N by Tencate Geosynthetics.
- G. Material specifications and certifications shall be submitted to the Engineer for approval prior to use on site.

2.02 STOCKPILES

- A. If required, Contractor shall construct a stockpile for the temporary storage of excavation and trench spoils. The maximum stockpile size shall be 500 cubic yards. Stockpiles shall be constructed to include:
1. A chemically resistant geomembrane liner placed underneath the stockpile material. The liner shall be free of holes or other damage. Non-reinforced geomembrane bottom liners shall have a minimum thickness of 10 mils. The ground surface on which the geomembrane liner is to be placed shall be free of rocks greater than 0.5 inches in diameter and any other object which could damage the membrane.
 2. A geomembrane top liner free of holes or other damage to prevent precipitation from entering the stockpile. The top liner shall be extended over the berms and anchored or ballasted to prevent it from being removed or damaged by wind. Non-reinforced geomembrane top liners shall have a minimum thickness of 6 mils.

V2109971

for time or money will be made if resubmittals of the CMH Plan are required due to deficiencies in the plan. At a minimum, the CMH Plan shall include:

- a. Schedule of activities.
- b. Method of excavation and equipment to be used.
- c. Shoring or side-wall slopes proposed.
- d. Dewatering plan.
- e. Storage methods and locations for liquid and solid contaminated material.
- f. Borrow sources and haul routes.
- g. Methods and procedures for the transportation, and disposal of contaminated materials, in compliance with applicable federal, state, and local laws and regulations, including the documentation associated with contaminated material and the use of certified, licensed transporters.
- h. Decontamination procedures.

PART 2 PRODUCTS

2.01 BEDDING AND BACKFILL MATERIAL

- A. Bedding and backfill material shall be procured and installed by the Contractor. Material excavated from the remedial excavations shall not be used as backfill.
- B. For AS/SVE excavations, bedding material shall be placed around the SVE lines and AS conduits as shown in Figures 1.6, 1.7, and 1.10. Bedding material shall be round washed gravel meeting the gradation requirements of Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction (2021), Section 9-03.1(4)C, Course Aggregate for Concrete, AASHTO Grading No. 8, or equal as approved by the Engineer. The bedding material shall be free from roots and other organic matter, trash, contamination, debris, snow, ice or frozen materials.
- C. For remedial excavations, backfill material above the water table shall include clean well-graded mixtures of sand and gravel (commonly called "gravel borrow" or "pit-run") meeting the gradation requirements of WSDOT Standard Specifications for Road, Bridge, and Municipal Construction (2021), Section 9-03.14(1) Gravel Borrow, and shall be free from roots and other organic matter, trash, contamination, debris, snow, ice or frozen materials. Groundwater level in the vicinity has been observed at 8 to 10 feet below existing ground surface (begs).
- D. For remedial excavations, backfill material below the water table shall be clean quarry spall meeting the gradation requirements of WSDOT Standard Specifications for Road, Bridge, and Municipal Construction (2021), Section 9-



Subcontract Lab Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



September 1, 2021

Mr. Luke Rahn
ALS Laboratory Group
1317 South 13th Avenue
Kelso, WA 98626

Dear Mr. Rahn,

On August 31st, 1 sample was received by our laboratory and assigned our laboratory project number EV21080145. The project was identified as your K2109971. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Glen Perry
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	ALS Laboratory Group 1317 South 13th Avenue Kelso, WA 98626	DATE:	9/1/2021
CLIENT CONTACT:	Luke Rahn	ALS JOB#:	EV21080145
CLIENT PROJECT:	K2109971	ALS SAMPLE#:	EV21080145-01
CLIENT SAMPLE ID	1	DATE RECEIVED:	08/31/2021
		COLLECTION DATE:	8/26/2021 11:27:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/31/2021	KLS
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	08/31/2021	JNF
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	08/31/2021	JNF
PCB-1016	EPA-8082	U	0.10	1	MG/KG	09/01/2021	GAP
PCB-1221	EPA-8082	U	0.10	1	MG/KG	09/01/2021	GAP
PCB-1232	EPA-8082	U	0.10	1	MG/KG	09/01/2021	GAP
PCB-1242	EPA-8082	U	0.10	1	MG/KG	09/01/2021	GAP
PCB-1248	EPA-8082	U	0.10	1	MG/KG	09/01/2021	GAP
PCB-1254	EPA-8082	U	0.10	1	MG/KG	09/01/2021	GAP
PCB-1260	EPA-8082	U	0.10	1	MG/KG	09/01/2021	GAP
PCB-1268	EPA-8082	U	0.10	1	MG/KG	09/01/2021	GAP
Arsenic	EPA-6020	3.4	0.20	1	MG/KG	08/31/2021	EBS
Copper	EPA-6020	25	0.10	1	MG/KG	08/31/2021	EBS
Lead	EPA-6020	3.8	0.10	1	MG/KG	08/31/2021	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	97.2	08/31/2021	KLS
C25	NWTPH-DX	85.3	08/31/2021	JNF
TCMX	EPA-8082	83.4	09/01/2021	GAP
DCB	EPA-8082	73.1	09/01/2021	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	ALS Laboratory Group 1317 South 13th Avenue Kelso, WA 98626	DATE:	9/1/2021
CLIENT CONTACT:	Luke Rahn	ALS SDG#:	EV21080145
CLIENT PROJECT:	K2109971	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MBG-083121S - Batch 169753 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	08/31/2021	KLS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-083121S - Batch 169734 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	08/31/2021	JNF
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	08/31/2021	JNF

U - Analyte analyzed for but not detected at level above reporting limit.

MB-083121S - Batch 169762 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	MG/KG	0.10	09/01/2021	GAP
PCB-1221	EPA-8082	U	MG/KG	0.10	09/01/2021	GAP
PCB-1232	EPA-8082	U	MG/KG	0.10	09/01/2021	GAP
PCB-1242	EPA-8082	U	MG/KG	0.10	09/01/2021	GAP
PCB-1248	EPA-8082	U	MG/KG	0.10	09/01/2021	GAP
PCB-1254	EPA-8082	U	MG/KG	0.10	09/01/2021	GAP
PCB-1260	EPA-8082	U	MG/KG	0.10	09/01/2021	GAP
PCB-1268	EPA-8082	U	MG/KG	0.10	09/01/2021	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-083121S - Batch 169735 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/KG	0.20	08/31/2021	EBS
Copper	EPA-6020	U	MG/KG	0.10	08/31/2021	EBS
Lead	EPA-6020	U	MG/KG	0.10	08/31/2021	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	ALS Laboratory Group 1317 South 13th Avenue Kelso, WA 98626	DATE:	9/1/2021
CLIENT CONTACT:	Luke Rahn	ALS SDG#:	EV21080145
CLIENT PROJECT:	K2109971	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 169753 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	70.0			66.5	122.7	08/31/2021	KLS
TPH-Volatile Range - BSD	NWTPH-GX	71.9	3		66.5	122.7	08/31/2021	KLS

ALS Test Batch ID: 169734 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	91.7			75.5	122.1	08/31/2021	JNF
TPH-Diesel Range - BSD	NWTPH-DX	96.5	5		75.5	122.1	08/31/2021	JNF

ALS Test Batch ID: 169762 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
PCB-1016 - BS	EPA-8082	96.0			50	150	09/01/2021	GAP
PCB-1016 - BSD	EPA-8082	99.4	3		50	150	09/01/2021	GAP
PCB-1260 - BS	EPA-8082	94.5			50	150	09/01/2021	GAP
PCB-1260 - BSD	EPA-8082	107	12		50	150	09/01/2021	GAP

ALS Test Batch ID: 169735 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	95.6			80	120	08/31/2021	EBS
Arsenic - BSD	EPA-6020	95.7	0		80	120	08/31/2021	EBS
Copper - BS	EPA-6020	99.2			80	120	08/31/2021	EBS
Copper - BSD	EPA-6020	99.5	0		80	120	08/31/2021	EBS
Lead - BS	EPA-6020	94.0			80	120	08/31/2021	EBS
Lead - BSD	EPA-6020	94.4	0		80	120	08/31/2021	EBS

APPROVED BY

Laboratory Director

ALS Environmental Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Luke Rahn

Project Number: K2109971
Project Manager: Luke Rahn
QAP: LAB QAP

EV21080145

Lab Code	Sample ID	# of Cont.	Matrix	Sample			Relinquish
				Date	Time	Lab ID	
K2109971-001	1		Misc. Solid	8/26/21	1127	Everett ALS	X

Test Comments
 Relinquish - None

K2109971-001

Send ground sample to Everett.

Dx
 Gx
 PCB
 As, Pb, Cu

Special Instructions/Comments Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.	Turnaround Requirements RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 STANDARD Requested FAX Date: _____ Requested Report Date: 09/15/21	Report Requirements I. Results Only _____ II. Results + QC Summaries _____ III. Results + QC and Calibration Summaries _____ IV. Data Validation Report with Raw Data _____ PQL/MDL/J <u> N </u> EDD <u> N </u>	Invoice Information PO# 51K2109971 Bill to
	H - Test is On Hold P - Test is Authorized for Prep Only		

Relinquished By: Dx 8:30:21 Received By: Vin Perry ALS 8/31/21 1:20PM Airbill Number: _____

Attachment E-9

Gravel Borrow and Quarry Spall, Chemical Results, Fremont Analytical, Inc., Work Order No. 2207288

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



Shannon & Wilson

Meg Strong

400 N. 34th Street, Suite 100

Seattle, WA 98103

RE: 8801

Work Order Number: 2207288

August 17, 2022

Attention Meg Strong:

Fremont Analytical, Inc. received 2 sample(s) on 7/20/2022 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Gasoline by NWTPH-Gx

Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Polychlorinated Biphenyls (PCB) by EPA 8082

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

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Revision v2



CLIENT: Shannon & Wilson
Project: 8801
Work Order: 2207288

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2207288-001	Gravel Borrow	07/20/2022 2:00 PM	07/20/2022 3:15 PM
2207288-002	Quarry Spalls	07/20/2022 2:10 PM	07/20/2022 3:15 PM

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

CLIENT: Shannon & Wilson**Project:** 8801

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.

Prep Comments for METHOD (PREP-PCB-S), SAMPLE (2207288-001A) required Acid Cleanup Procedure (Using Method No 3665A).

Prep Comments for METHOD (PREP-PCB-S), SAMPLE (2207288-002A) required Acid Cleanup Procedure (Using Method No 3665A).

Prep Comments for METHOD (PREP-PCB-S), SAMPLE (2207288-001A) required Florisil Cleanup Procedure (Using Method No 3620C).

Prep Comments for METHOD (PREP-PCB-S), SAMPLE (2207288-002A) required Florisil Cleanup Procedure (Using Method No 3620C).

8/12/2022: Revision 1 includes additional analysis that was inadvertently omitted from the original report.

8/17/2022: Revision 2 includes additional analysis requested by the client.

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: 2207288
Date Reported: 8/17/2022

Client: Shannon & Wilson

Collection Date: 7/20/2022 2:00:00 PM

Project: 8801

Lab ID: 2207288-001

Matrix: Soil

Client Sample ID: Gravel Borrow

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

Polychlorinated Biphenyls (PCB) by EPA 8082

Batch ID: 37233 Analyst: OK

Aroclor 1016	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Aroclor 1221	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Aroclor 1232	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Aroclor 1242	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Aroclor 1248	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Aroclor 1254	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Aroclor 1260	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Aroclor 1262	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Aroclor 1268	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Total PCBs	ND	0.0481		mg/Kg-dry	1	7/26/2022 4:22:36 PM
Surr: Decachlorobiphenyl	98.1	9.77 - 154		%Rec	1	7/26/2022 4:22:36 PM
Surr: Tetrachloro-m-xylene	83.2	24.2 - 187		%Rec	1	7/26/2022 4:22:36 PM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 37242 Analyst: KJ

Diesel (Fuel Oil)	ND	50.1		mg/Kg-dry	1	7/26/2022 2:44:42 PM
Heavy Oil	ND	100		mg/Kg-dry	1	7/26/2022 2:44:42 PM
Total Petroleum Hydrocarbons	ND	150		mg/Kg-dry	1	7/26/2022 2:44:42 PM
Surr: 2-Fluorobiphenyl	94.5	50 - 150		%Rec	1	7/26/2022 2:44:42 PM
Surr: o-Terphenyl	100	50 - 150		%Rec	1	7/26/2022 2:44:42 PM

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 37240 Analyst: OK

Naphthalene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
2-Methylnaphthalene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
1-Methylnaphthalene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Acenaphthylene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Acenaphthene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Fluorene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Phenanthrene	ND	39.6		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Anthracene	ND	39.6		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Fluoranthene	ND	39.6		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Pyrene	ND	39.6		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Benz(a)anthracene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Chrysene	ND	39.6		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Benzo(b)fluoranthene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Benzo(k)fluoranthene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Benzo(a)pyrene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Indeno(1,2,3-cd)pyrene	ND	39.6		µg/Kg-dry	1	7/26/2022 3:41:39 PM



Client: Shannon & Wilson

Collection Date: 7/20/2022 2:00:00 PM

Project: 8801

Lab ID: 2207288-001

Matrix: Soil

Client Sample ID: Gravel Borrow

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 37240 Analyst: OK

Dibenz(a,h)anthracene	ND	39.6		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Benzo(g,h,i)perylene	ND	19.8		µg/Kg-dry	1	7/26/2022 3:41:39 PM
Surr: 2-Fluorobiphenyl	79.9	34.4 - 132		%Rec	1	7/26/2022 3:41:39 PM
Surr: Terphenyl-d14 (surr)	84.9	32.8 - 147		%Rec	1	7/26/2022 3:41:39 PM

Gasoline by NWTPH-Gx

Batch ID: 37238 Analyst: TN

Gasoline	ND	4.77		mg/Kg-dry	1	7/26/2022 6:26:22 AM
Surr: Toluene-d8	97.6	65 - 135		%Rec	1	7/26/2022 6:26:22 AM
Surr: 4-Bromofluorobenzene	100	65 - 135		%Rec	1	7/26/2022 6:26:22 AM

Total Metals by EPA Method 6020B

Batch ID: 37224 Analyst: EH

Arsenic	3.93	0.0991		mg/Kg-dry	1	7/25/2022 3:32:21 PM
Copper	24.3	0.826		mg/Kg-dry	1	7/25/2022 3:32:21 PM
Lead	2.74	0.165		mg/Kg-dry	1	7/25/2022 3:32:21 PM

Sample Moisture (Percent Moisture)

Batch ID: R77069 Analyst: ALB

Percent Moisture	6.82	0.500		wt%	1	7/25/2022 4:28:26 PM
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Client: Shannon & Wilson

Collection Date: 7/20/2022 2:10:00 PM

Project: 8801

Lab ID: 2207288-002

Matrix: Solid

Client Sample ID: Quarry Spalls

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Polychlorinated Biphenyls (PCB) by EPA 8082

Batch ID: 37233

Analyst: OK

Aroclor 1016	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Aroclor 1221	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Aroclor 1232	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Aroclor 1242	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Aroclor 1248	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Aroclor 1254	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Aroclor 1260	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Aroclor 1262	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Aroclor 1268	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Total PCBs	ND	0.0518		mg/Kg-dry	1	7/26/2022 4:51:48 PM
Surr: Decachlorobiphenyl	98.7	9.77 - 154		%Rec	1	7/26/2022 4:51:48 PM
Surr: Tetrachloro-m-xylene	84.9	24.2 - 187		%Rec	1	7/26/2022 4:51:48 PM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 37242

Analyst: KJ

Diesel (Fuel Oil)	ND	50.5		mg/Kg-dry	1	7/26/2022 10:12:59 AM
Heavy Oil	ND	101		mg/Kg-dry	1	7/26/2022 10:12:59 AM
Total Petroleum Hydrocarbons	ND	152		mg/Kg-dry	1	7/26/2022 10:12:59 AM
Surr: 2-Fluorobiphenyl	106	50 - 150		%Rec	1	7/26/2022 10:12:59 AM
Surr: o-Terphenyl	111	50 - 150		%Rec	1	7/26/2022 10:12:59 AM

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 37240

Analyst: OK

Naphthalene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
2-Methylnaphthalene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
1-Methylnaphthalene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Acenaphthylene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Acenaphthene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Fluorene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Phenanthrene	ND	41.8		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Anthracene	ND	41.8		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Fluoranthene	ND	41.8		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Pyrene	ND	41.8		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Benz(a)anthracene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Chrysene	ND	41.8		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Benzo(b)fluoranthene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Benzo(k)fluoranthene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Benzo(a)pyrene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Indeno(1,2,3-cd)pyrene	ND	41.8		µg/Kg-dry	1	7/26/2022 4:10:33 PM



Client: Shannon & Wilson

Collection Date: 7/20/2022 2:10:00 PM

Project: 8801

Lab ID: 2207288-002

Matrix: Solid

Client Sample ID: Quarry Spalls

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 37240 Analyst: OK

Dibenz(a,h)anthracene	ND	41.8		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Benzo(g,h,i)perylene	ND	20.9		µg/Kg-dry	1	7/26/2022 4:10:33 PM
Surr: 2-Fluorobiphenyl	96.8	34.4 - 132		%Rec	1	7/26/2022 4:10:33 PM
Surr: Terphenyl-d14 (surr)	104	32.8 - 147		%Rec	1	7/26/2022 4:10:33 PM

Gasoline by NWTPH-Gx

Batch ID: 37287 Analyst: TN

Gasoline Range Organics	ND	4.65		mg/Kg-dry	1	7/29/2022 12:11:07 PM
Surr: Toluene-d8	94.7	65 - 135		%Rec	1	7/29/2022 12:11:07 PM
Surr: 4-Bromofluorobenzene	100	65 - 135		%Rec	1	7/29/2022 12:11:07 PM

Total Metals by EPA Method 6020B

Batch ID: 37403 Analyst: EH

Arsenic	0.483	0.102		mg/Kg-dry	1	8/12/2022 2:35:01 PM
Copper	3.04	0.847		mg/Kg-dry	1	8/12/2022 2:35:01 PM
Lead	0.800	0.169		mg/Kg-dry	1	8/12/2022 2:35:01 PM

Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Batch ID: 37223 Analyst: EH

Arsenic	ND	3.00		µg/L	1	7/26/2022 5:07:31 PM
Copper	ND	3.00		µg/L	1	7/26/2022 5:07:31 PM

Sample Moisture (Percent Moisture)

Batch ID: R77069 Analyst: ALB

Percent Moisture	6.26	0.500		wt%	1	7/25/2022 4:28:26 PM
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Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: MB-37224	SampType: MBLK	Units: mg/Kg	Prep Date: 7/25/2022	RunNo: 77074							
Client ID: MBLKS	Batch ID: 37224	Analysis Date: 7/25/2022	SeqNo: 1582914								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0923									
Copper	ND	0.769									
Lead	ND	0.154									

Sample ID: LCS-37224	SampType: LCS	Units: mg/Kg	Prep Date: 7/25/2022	RunNo: 77074							
Client ID: LCSS	Batch ID: 37224	Analysis Date: 7/25/2022	SeqNo: 1582915								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	38.0	0.0952	39.68	0	95.7	80	120				
Copper	40.8	0.794	39.68	0	103	80	120				
Lead	20.5	0.159	19.84	0	103	80	120				

Sample ID: 2207278-003AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 7/25/2022	RunNo: 77074							
Client ID: BATCH	Batch ID: 37224	Analysis Date: 7/25/2022	SeqNo: 1582918								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	45.7	0.0980	40.82	6.768	95.4	75	125				
Copper	60.0	0.816	40.82	23.66	89.1	75	125				
Lead	39.5	0.163	20.41	24.24	74.9	75	125				S

NOTES:

S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: 2207278-003AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 7/25/2022	RunNo: 77074							
Client ID: BATCH	Batch ID: 37224	Analysis Date: 7/25/2022	SeqNo: 1582919								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	46.9	0.0980	40.82	6.768	98.3	75	125	45.69	2.59	20	
Copper	64.2	0.816	40.82	23.66	99.3	75	125	60.02	6.74	20	
Lead	49.1	0.163	20.41	24.24	122	75	125	39.54	21.6	20	R

NOTES:

R - High RPD observed.

Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: MB-37403	SampType: MBLK	Units: mg/Kg	Prep Date: 8/11/2022	RunNo: 77505							
Client ID: MBLKS	Batch ID: 37403		Analysis Date: 8/12/2022	SeqNo: 1592121							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0930									
Copper	ND	0.775									
Lead	ND	0.155									

Sample ID: LCS-37403	SampType: LCS	Units: mg/Kg	Prep Date: 8/11/2022	RunNo: 77505							
Client ID: LCSS	Batch ID: 37403		Analysis Date: 8/12/2022	SeqNo: 1592122							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	34.1	0.0938	39.06	0	87.4	80	120				
Copper	36.6	0.781	39.06	0	93.6	80	120				
Lead	19.6	0.156	19.53	0	101	80	120				

Sample ID: 2207288-002AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 8/11/2022	RunNo: 77505							
Client ID: Quarry Spalls	Batch ID: 37403		Analysis Date: 8/12/2022	SeqNo: 1592127							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	40.8	0.0992	41.35	0.4829	97.4	75	125				
Copper	60.7	0.827	41.35	3.043	140	75	125				S
Lead	20.0	0.165	20.67	0.8004	92.7	75	125				

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID: 2207288-002AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 8/11/2022	RunNo: 77505							
Client ID: Quarry Spalls	Batch ID: 37403		Analysis Date: 8/12/2022	SeqNo: 1592128							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	43.5	0.102	42.33	0.4829	102	75	125	40.76	6.53	20	
Copper	54.8	0.847	42.33	3.043	122	75	125	60.73	10.3	20	
Lead	21.1	0.169	21.17	0.8004	96.1	75	125	19.97	5.68	20	

Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT
Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Sample ID: MB-37223	SampType: MBLK	Units: µg/L	Prep Date: 7/25/2022	RunNo: 77116							
Client ID: MBLKS	Batch ID: 37223		Analysis Date: 7/26/2022	SeqNo: 1583855							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	3.00									
Copper	ND	3.00									

Sample ID: LCS-37223	SampType: LCS	Units: µg/L	Prep Date: 7/25/2022	RunNo: 77116							
Client ID: LCSS	Batch ID: 37223		Analysis Date: 7/26/2022	SeqNo: 1583856							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	103	17.5	100.0	0	103	85	115				
Copper	97.9	10.0	100.0	0	97.9	85	115				

Sample ID: 2207316-001CDUP	SampType: DUP	Units: µg/L	Prep Date: 7/25/2022	RunNo: 77116							
Client ID: BATCH	Batch ID: 37223		Analysis Date: 7/26/2022	SeqNo: 1583858							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	3.00						0		30	
Copper	25.9	3.00						25.90	0.122	30	

Sample ID: 2207316-001CMS	SampType: MS	Units: µg/L	Prep Date: 7/25/2022	RunNo: 77116							
Client ID: BATCH	Batch ID: 37223		Analysis Date: 7/26/2022	SeqNo: 1583859							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	97.0	17.5	100.0	0.8424	96.2	70	130				
Copper	118	10.0	100.0	25.90	92.0	70	130				

Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: MB-37242	SampType: MBLK	Units: mg/Kg			Prep Date: 7/25/2022	RunNo: 77112					
Client ID: MBLKS	Batch ID: 37242				Analysis Date: 7/26/2022	SeqNo: 1583685					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Total Petroleum Hydrocarbons	ND	150									
Surr: 2-Fluorobiphenyl	10.7		10.00		107	50	150				
Surr: o-Terphenyl	11.0		10.00		110	50	150				

Sample ID: LCS-37242	SampType: LCS	Units: mg/Kg			Prep Date: 7/25/2022	RunNo: 77112					
Client ID: LCSS	Batch ID: 37242				Analysis Date: 7/26/2022	SeqNo: 1583686					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Petroleum Hydrocarbons	490	150	500.0	0	98.0	65.4	132				
Surr: 2-Fluorobiphenyl	7.77		10.00		77.7	50	150				
Surr: o-Terphenyl	10.9		10.00		109	50	150				

Sample ID: 2207292-002AMS	SampType: MS	Units: mg/Kg-dry			Prep Date: 7/25/2022	RunNo: 77112					
Client ID: BATCH	Batch ID: 37242				Analysis Date: 7/26/2022	SeqNo: 1583692					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Petroleum Hydrocarbons	651	162	540.9	209.2	81.8	51.3	140				
Surr: 2-Fluorobiphenyl	11.3		10.82		105	50	150				
Surr: o-Terphenyl	14.4		10.82		133	50	150				

Sample ID: 2207292-002AMSD	SampType: MSD	Units: mg/Kg-dry			Prep Date: 7/25/2022	RunNo: 77112					
Client ID: BATCH	Batch ID: 37242				Analysis Date: 7/26/2022	SeqNo: 1583695					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Petroleum Hydrocarbons	700	167	557.2	209.2	88.1	51.3	140	651.4	7.19	30	
Surr: 2-Fluorobiphenyl	10.5		11.14		94.1	50	150		0		
Surr: o-Terphenyl	12.5		11.14		112	50	150		0		

Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: MB-37240	SampType: MBLK	Units: µg/Kg	Prep Date: 7/25/2022	RunNo: 77128							
Client ID: MBLKS	Batch ID: 37240		Analysis Date: 7/26/2022	SeqNo: 1584236							
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									
Acenaphthylene	ND	20.0									
Acenaphthene	ND	20.0									
Fluorene	ND	20.0									
Phenanthrene	ND	40.0									
Anthracene	ND	40.0									
Fluoranthene	ND	40.0									
Pyrene	ND	40.0									
Benz(a)anthracene	ND	20.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	20.0									
Benzo(k)fluoranthene	ND	20.0									
Benzo(a)pyrene	ND	20.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Benzo(g,h,i)perylene	ND	20.0									
Surr: 2-Fluorobiphenyl	603		1,000		60.3	34.4	132				
Surr: Terphenyl-d14 (surr)	635		1,000		63.5	32.8	147				

Sample ID: LCS-37240	SampType: LCS	Units: µg/Kg	Prep Date: 7/25/2022	RunNo: 77128							
Client ID: LCSS	Batch ID: 37240		Analysis Date: 7/26/2022	SeqNo: 1584237							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Naphthalene	1,440	20.0	2,000	0	72.2	64.3	115				
2-Methylnaphthalene	1,460	20.0	2,000	0	72.8	58.9	122				
1-Methylnaphthalene	1,410	20.0	2,000	0	70.3	57.4	122				
Acenaphthylene	1,400	20.0	2,000	0	70.1	52.9	120				
Acenaphthene	1,470	20.0	2,000	0	73.3	61.1	119				
Fluorene	1,480	20.0	2,000	0	74.0	63.6	120				

Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: LCS-37240	SampType: LCS	Units: µg/Kg	Prep Date: 7/25/2022	RunNo: 77128							
Client ID: LCSS	Batch ID: 37240		Analysis Date: 7/26/2022	SeqNo: 1584237							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	1,480	40.0	2,000	0	73.9	60	118				
Anthracene	1,500	40.0	2,000	0	75.1	59.5	119				
Fluoranthene	1,490	40.0	2,000	0	74.6	62.3	120				
Pyrene	1,520	40.0	2,000	0	76.1	61.1	120				
Benz(a)anthracene	1,490	20.0	2,000	0	74.7	61.5	123				
Chrysene	1,470	40.0	2,000	0	73.3	58.6	120				
Benzo(b)fluoranthene	1,480	20.0	2,000	0	74.1	62.1	124				
Benzo(k)fluoranthene	1,520	20.0	2,000	0	75.9	60.3	116				
Benzo(a)pyrene	1,370	20.0	2,000	0	68.7	51.6	115				
Indeno(1,2,3-cd)pyrene	1,400	40.0	2,000	0	69.9	53.8	127				
Dibenz(a,h)anthracene	1,310	40.0	2,000	0	65.6	53.3	127				
Benzo(g,h,i)perylene	1,250	20.0	2,000	0	62.6	48.6	122				
Surr: 2-Fluorobiphenyl	714		1,000		71.4	34.4	132				
Surr: Terphenyl-d14 (surr)	722		1,000		72.2	32.8	147				

Sample ID: 2207284-003AMS	SampType: MS	Units: µg/Kg-dry	Prep Date: 7/25/2022	RunNo: 77128							
Client ID: BATCH	Batch ID: 37240		Analysis Date: 7/26/2022	SeqNo: 1584242							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,620	19.5	1,947	0	83.4	55.7	105				
2-Methylnaphthalene	1,660	19.5	1,947	3.655	84.8	56.6	103				
1-Methylnaphthalene	1,600	19.5	1,947	3.052	82.0	56.1	101				
Acenaphthylene	1,640	19.5	1,947	30.61	82.8	53.8	100				
Acenaphthene	1,660	19.5	1,947	4.928	85.1	55.9	107				
Fluorene	1,700	19.5	1,947	5.828	86.8	55.7	107				
Phenanthrene	1,710	38.9	1,947	36.21	86.2	49.1	109				
Anthracene	1,860	38.9	1,947	92.87	90.9	52.4	107				
Fluoranthene	2,020	38.9	1,947	316.1	87.6	53.1	110				
Pyrene	2,010	38.9	1,947	293.5	88.1	52.5	109				
Benz(a)anthracene	1,860	19.5	1,947	101.4	90.4	53.4	112				
Chrysene	1,870	38.9	1,947	218.8	85.0	52	105				

Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: 2207284-003AMS	SampType: MS	Units: µg/Kg-dry			Prep Date: 7/25/2022	RunNo: 77128					
Client ID: BATCH	Batch ID: 37240				Analysis Date: 7/26/2022	SeqNo: 1584242					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	2,000	19.5	1,947	310.3	86.9	51.3	119				
Benzo(k)fluoranthene	1,820	19.5	1,947	77.22	89.6	50.3	108				
Benzo(a)pyrene	1,690	19.5	1,947	110.1	80.9	48.5	106				
Indeno(1,2,3-cd)pyrene	1,470	38.9	1,947	60.85	72.3	42.1	113				
Dibenz(a,h)anthracene	1,370	38.9	1,947	15.94	69.4	40.4	114				
Benzo(g,h,i)perylene	1,220	19.5	1,947	54.11	59.7	34.7	105				
Surr: 2-Fluorobiphenyl	821		973.6		84.4	34.4	132				
Surr: Terphenyl-d14 (surr)	871		973.6		89.5	32.8	147				

Sample ID: 2207284-003AMSD	SampType: MSD	Units: µg/Kg-dry			Prep Date: 7/25/2022	RunNo: 77128					
Client ID: BATCH	Batch ID: 37240				Analysis Date: 7/26/2022	SeqNo: 1584243					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,670	18.8	1,876	0	88.8	55.7	105	1,624	2.54	30	
2-Methylnaphthalene	1,690	18.8	1,876	3.655	89.7	56.6	103	1,655	1.86	30	
1-Methylnaphthalene	1,630	18.8	1,876	3.052	86.9	56.1	101	1,599	2.12	30	
Acenaphthylene	1,670	18.8	1,876	30.61	87.6	53.8	100	1,642	1.91	30	
Acenaphthene	1,730	18.8	1,876	4.928	92.2	55.9	107	1,662	4.27	30	
Fluorene	1,760	18.8	1,876	5.828	93.3	55.7	107	1,695	3.57	30	
Phenanthrene	1,760	37.5	1,876	36.21	92.0	49.1	109	1,714	2.71	30	
Anthracene	1,890	37.5	1,876	92.87	95.8	52.4	107	1,862	1.47	30	
Fluoranthene	2,080	37.5	1,876	316.1	94.2	53.1	110	2,021	3.03	30	
Pyrene	2,100	37.5	1,876	293.5	96.4	52.5	109	2,010	4.50	30	
Benz(a)anthracene	1,920	18.8	1,876	101.4	97.1	53.4	112	1,862	3.27	30	
Chrysene	1,980	37.5	1,876	218.8	93.7	52	105	1,873	5.39	30	
Benzo(b)fluoranthene	2,160	18.8	1,876	310.3	98.6	51.3	119	2,001	7.63	30	
Benzo(k)fluoranthene	1,870	18.8	1,876	77.22	95.8	50.3	108	1,822	2.86	30	
Benzo(a)pyrene	1,770	18.8	1,876	110.1	88.7	48.5	106	1,686	5.14	30	
Indeno(1,2,3-cd)pyrene	1,500	37.5	1,876	60.85	76.6	42.1	113	1,469	1.96	30	
Dibenz(a,h)anthracene	1,390	37.5	1,876	15.94	73.4	40.4	114	1,368	1.82	30	
Benzo(g,h,i)perylene	1,240	18.8	1,876	54.11	63.0	34.7	105	1,216	1.74	30	

Work Order: 2207288
CLIENT: Shannon & Wilson
Project: 8801

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: 2207284-003AMSD	SampType: MSD	Units: µg/Kg-dry	Prep Date: 7/25/2022	RunNo: 77128							
Client ID: BATCH	Batch ID: 37240	Analysis Date: 7/26/2022	SeqNo: 1584243								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	811		938.2		86.4	34.4	132		0		
Surr: Terphenyl-d14 (surr)	859		938.2		91.5	32.8	147		0		

Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT
Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: MB-37233	SampType: MBLK	Units: mg/Kg			Prep Date: 7/25/2022	RunNo: 77099					
Client ID: MBLKS	Batch ID: 37233				Analysis Date: 7/26/2022	SeqNo: 1583454					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0500									
Aroclor 1221	ND	0.0500									
Aroclor 1232	ND	0.0500									
Aroclor 1242	ND	0.0500									
Aroclor 1248	ND	0.0500									
Aroclor 1254	ND	0.0500									
Aroclor 1260	ND	0.0500									
Aroclor 1262	ND	0.0500									
Aroclor 1268	ND	0.0500									
Total PCBs	ND	0.0500									
Surr: Decachlorobiphenyl	231		200.0		115	9.77	154				
Surr: Tetrachloro-m-xylene	173		200.0		86.3	24.2	187				

Sample ID: LCS-37233	SampType: LCS	Units: mg/Kg			Prep Date: 7/25/2022	RunNo: 77099					
Client ID: LCSS	Batch ID: 37233				Analysis Date: 7/26/2022	SeqNo: 1583455					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.937	0.0500	1.000	0	93.7	75.7	162				
Aroclor 1260	0.873	0.0500	1.000	0	87.3	57.8	183				
Surr: Decachlorobiphenyl	214		200.0		107	9.77	154				
Surr: Tetrachloro-m-xylene	174		200.0		87.0	24.2	187				

Sample ID: 2207288-001AMS	SampType: MS	Units: mg/Kg-dry			Prep Date: 7/25/2022	RunNo: 77099					
Client ID: Gravel Borrow	Batch ID: 37233				Analysis Date: 7/26/2022	SeqNo: 1584416					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.892	0.0453	0.9064	0	98.4	55.6	188				
Aroclor 1260	0.887	0.0453	0.9064	0	97.9	54.5	178				
Surr: Decachlorobiphenyl	182		181.3		100	9.77	154				
Surr: Tetrachloro-m-xylene	135		181.3		74.6	24.2	187				

Work Order: 2207288
CLIENT: Shannon & Wilson
Project: 8801

QC SUMMARY REPORT
Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: 2207288-001AMSD	SampType: MSD	Units: mg/Kg-dry			Prep Date: 7/25/2022	RunNo: 77099					
Client ID: Gravel Borrow	Batch ID: 37233				Analysis Date: 7/26/2022	SeqNo: 1584417					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.879	0.0522	1.045	0	84.1	55.6	188	0.8918	1.41	30	
Aroclor 1260	0.846	0.0522	1.045	0	80.9	54.5	178	0.8873	4.80	30	
Surr: Decachlorobiphenyl	189		209.0		90.2	9.77	154		0		
Surr: Tetrachloro-m-xylene	148		209.0		70.7	24.2	187		0		

Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID: LCS-37238	SampType: LCS	Units: mg/Kg				Prep Date: 7/25/2022	RunNo: 77084				
Client ID: LCSS	Batch ID: 37238					Analysis Date: 7/25/2022	SeqNo: 1583101				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	25.8	5.00	25.00	0	103	65	135				
Surr: Toluene-d8	1.25		1.250		100	65	135				
Surr: 4-Bromofluorobenzene	1.27		1.250		101	65	135				

Sample ID: MB-37238	SampType: MBLK	Units: mg/Kg				Prep Date: 7/25/2022	RunNo: 77084				
Client ID: MBLKS	Batch ID: 37238					Analysis Date: 7/25/2022	SeqNo: 1583100				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	1.24		1.250		99.3	65	135				
Surr: 4-Bromofluorobenzene	1.25		1.250		99.8	65	135				

Sample ID: 2207278-005BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 7/25/2022	RunNo: 77084				
Client ID: BATCH	Batch ID: 37238					Analysis Date: 7/25/2022	SeqNo: 1583083				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	6.11	4.40						2.528	82.9	30	
Surr: Toluene-d8	1.08		1.099		98.0	65	135		0		
Surr: 4-Bromofluorobenzene	1.16		1.099		106	65	135		0		

Sample ID: 2207291-003BMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 7/25/2022	RunNo: 77084				
Client ID: BATCH	Batch ID: 37238					Analysis Date: 7/26/2022	SeqNo: 1583096				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	48.3	6.24	31.20	6.927	133	65	135				
Surr: Toluene-d8	1.56		1.560		99.7	65	135				
Surr: 4-Bromofluorobenzene	1.60		1.560		103	65	135				

Work Order: 2207288
 CLIENT: Shannon & Wilson
 Project: 8801

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID: 2207288-001BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 7/25/2022	RunNo: 77084				
Client ID: Gravel Borrow	Batch ID: 37238					Analysis Date: 7/26/2022	SeqNo: 1583092				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	4.77						0		30	
Surr: Toluene-d8	1.15		1.192		96.4	65	135		0		
Surr: 4-Bromofluorobenzene	1.50		1.192		125	65	135		0		

Sample ID: LCS-37287	SampType: LCS	Units: mg/Kg				Prep Date: 7/29/2022	RunNo: 77207				
Client ID: LCSS	Batch ID: 37287					Analysis Date: 7/29/2022	SeqNo: 1585977				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	29.7	5.00	25.00	0	119	65	135				
Surr: Toluene-d8	1.20		1.250		95.7	65	135				
Surr: 4-Bromofluorobenzene	1.28		1.250		102	65	135				

Sample ID: MB-37287	SampType: MBLK	Units: mg/Kg				Prep Date: 7/29/2022	RunNo: 77207				
Client ID: MBLKS	Batch ID: 37287					Analysis Date: 7/29/2022	SeqNo: 1585976				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	5.00									
Surr: Toluene-d8	1.18		1.250		94.7	65	135				
Surr: 4-Bromofluorobenzene	1.23		1.250		98.1	65	135				

Sample ID: 2207288-002BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 7/29/2022	RunNo: 77207				
Client ID: Quarry Spalls	Batch ID: 37287					Analysis Date: 7/29/2022	SeqNo: 1585973				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	4.65						0		30	
Surr: Toluene-d8	1.11		1.162		95.7	65	135		0		
Surr: 4-Bromofluorobenzene	1.15		1.162		98.6	65	135		0		

Client Name: SW	Work Order Number: 2207288
Logged by: Clare Griggs	Date Received: 7/20/2022 3:15:00 PM

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
No cooler present.
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
Unknown prior to receipt.
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:	<input type="text" value="Mea Strona"/>	Date:	<input type="text" value="7/20/2022"/>
By Whom:	<input type="text" value="Matt Langston"/>	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text" value="Confirming analyses for sample two."/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	25.2

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



Fremont

ANALYTICAL

Chain of Custody Record and Laboratory Services Agreement

3600 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Date: 7/20/22

Laboratory Project No (Internal): 2207288

4801

Page: 1 of: 1

Project Name: 103485-009

Collected by: TWS

Project No: 103485-009

Location:

400 N. 34th Street, Ste. 100

Report To (PM): Meg Strong

Client: Shannon & Wilson

Report To (PM):

Meg Strong

City, State, zip: Seattle, WA 98103

PM Email: meg_strong@shawnwil.com

Telephone: 206-632-8000

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Analytes														Comments			
				VOCs (EPA 8260 / 624)	GY/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HClD)	Diesel/Heav Oil Range Organics (HX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM / 625)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)***	EDB (8011)	Other				
1 Gravel Borrows	7/20/22	1400	S				X	X	X	X	X	X	X	X	X	X	X	X	X		
2 Quarry Spalls	7/20/22	1410	S/O				X	X	X	X	X	X	X	X	X	X	X	X	X		
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Tl U V Zn

**Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite Turn-around times for samples received after 4:00pm will begin on the following business day.

Sample Disposal: Return to Client Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished [Signature] Date/Time 7/20/22 1515 Received [Signature] Date/Time 7/20/22 1515

Relinquished [Signature] Date/Time 7/20/22 1515 Received [Signature] Date/Time 7/20/22 1515

TAT → SameDay[▲] NextDay[▲] 2 Day 3 Day STD

*Please coordinate with the lab in advance

Attachment E-10

Quarry Spall, Chemical Results and #1 Modified SPLP, Fremont Analytical, Inc., Work Order No. 2109218

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



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

Anderson Environmental Contracting
Craig Nelson
705 Colorado St.
Kelso, WA 98626

RE: Paccar
Work Order Number: 2109218

September 29, 2021

Attention Craig Nelson:

Fremont Analytical, Inc. received 7 sample(s) on 9/15/2021 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Metals (EPA 200.8) with SPLP Extraction (EPA 1312)
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Polychlorinated Biphenyls (PCB) by EPA 8082
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

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Revision v2



CLIENT: Anderson Environmental Contracting
Project: Paccar
Work Order: 2109218

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2109218-001	Sample #1 Renton concrete recyclers 3/	09/15/2021 12:00 PM	09/15/2021 4:00 PM
2109218-002	Sample #2 Renton concrete recyclers q	09/15/2021 12:00 PM	09/15/2021 4:00 PM
2109218-003	Leachate Water	09/27/2021 2:00 PM	09/27/2021 2:59 PM
2109218-004	Renton concrete recyclers quarry spalls	09/15/2021 12:00 PM	09/15/2021 4:00 PM
2109218-005	Renton concrete recyclers quarry spalls	09/15/2021 12:00 PM	09/15/2021 4:00 PM
2109218-006	Renton concrete recyclers quarry spalls	09/15/2021 12:00 PM	09/15/2021 4:00 PM
2109218-007	Renton concrete recyclers quarry spalls	09/15/2021 12:00 PM	09/15/2021 4:00 PM

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

CLIENT: Anderson Environmental Contracting**Project:** Paccar

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.

Revision 1 reflects the analysis of the sample for leachable copper using the SPLP, EPA 1312, method as written, including particle size and acidified synthetic precipitation.

Revision 2 reflects the further analysis of four discrete chunks of sample (A, B, C, and D in this report) processed by a modified SPLP method, as follows. Four pieces were selected and processed "as received," i.e. particle size was not reduced. Samples were ~2-4" per size. The weights of each piece varied from ~80g to ~160g. Each piece was placed in a food-safe plastic container to which was added a volume (in mL) of site water equal to 20x the weight of the sample in grams. The site water was provided by the client, and was itself analyzed for total and dissolved copper by 200.8. Results of the site water analysis are available in a separate report.

After a short period of tumbling end-over-end at 30 rpm, it was determined that the containers were not leak-tight, and that overnight tumbling would result in a substantial or total loss of the leachate. The samples were left to sit in solution overnight. The following morning, the samples were tumbled using an alternative rotary tumbler which prevented contact with the leaking lid but that ensured the sample piece would agitate/tumble within the solution. Each sample was tumbled for between 30 and 45 minutes. The total time each sample remained in contact with the solution was 20 hours, including the periods of tumbling and overnight resting. This is consistent with (at the high end of) the SPLP timeframe for leaching duration.

Resulting leachates were respectively filtered through a 0.8 um filter, digested and analyzed for copper per 200.8.

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



Client: Anderson Environmental Contracting

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar

Lab ID: 2109218-001

Matrix: Rock/Gravel

Client Sample ID: Sample #1 Renton concrete recyclers 3/4 inch minus

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Polychlorinated Biphenyls (PCB) by EPA 8082

Batch ID: 33734

Analyst: SB

Aroclor 1016	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Aroclor 1221	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Aroclor 1232	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Aroclor 1242	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Aroclor 1248	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Aroclor 1254	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Aroclor 1260	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Aroclor 1262	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Aroclor 1268	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Total PCBs	ND	0.0485		mg/Kg-dry	1	9/17/2021 5:04:12 PM
Surr: Decachlorobiphenyl	88.4	20.6 - 142		%Rec	1	9/17/2021 5:04:12 PM
Surr: Tetrachloro-m-xylene	108	22 - 157		%Rec	1	9/17/2021 5:04:12 PM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 33733

Analyst: MM

Diesel (Fuel Oil)	ND	51.6		mg/Kg-dry	1	9/17/2021 8:29:36 PM
Heavy Oil	1,760	103		mg/Kg-dry	1	9/17/2021 8:29:36 PM
Total Petroleum Hydrocarbons	1,760	155		mg/Kg-dry	1	9/17/2021 8:29:36 PM
Surr: 2-Fluorobiphenyl	67.1	50 - 150		%Rec	1	9/17/2021 8:29:36 PM
Surr: o-Terphenyl	72.0	50 - 150		%Rec	1	9/17/2021 8:29:36 PM

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 33736

Analyst: IH

Benz(a)anthracene	93.1	20.4		µg/Kg-dry	1	9/17/2021 9:12:43 PM
Chrysene	204	40.8		µg/Kg-dry	1	9/17/2021 9:12:43 PM
Benzo(b)fluoranthene	97.4	20.4		µg/Kg-dry	1	9/17/2021 9:12:43 PM
Benzo(k)fluoranthene	97.3	20.4		µg/Kg-dry	1	9/17/2021 9:12:43 PM
Benzo(a)pyrene	99.0	20.4		µg/Kg-dry	1	9/17/2021 9:12:43 PM
Indeno(1,2,3-cd)pyrene	ND	40.8		µg/Kg-dry	1	9/17/2021 9:12:43 PM
Dibenz(a,h)anthracene	ND	40.8		µg/Kg-dry	1	9/17/2021 9:12:43 PM
Surr: 2-Fluorobiphenyl	84.1	27.9 - 129		%Rec	1	9/17/2021 9:12:43 PM
Surr: Terphenyl-d14 (surr)	111	39.1 - 145		%Rec	1	9/17/2021 9:12:43 PM

Total Metals by EPA Method 6020B

Batch ID: 33748

Analyst: EH

Arsenic	14.7	0.127		mg/Kg-dry	1	9/20/2021 10:58:48 PM
Copper	29.3	1.06		mg/Kg-dry	1	9/20/2021 10:58:48 PM
Lead	12.8	0.212		mg/Kg-dry	1	9/20/2021 10:58:48 PM



Client: Anderson Environmental Contracting

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar

Lab ID: 2109218-001

Matrix: Rock/Gravel

Client Sample ID: Sample #1 Renton concrete recyclers 3/4 inch minus

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Sample Moisture (Percent Moisture)

Batch ID: R69995 Analyst: cb

Percent Moisture	5.80	0.500		wt%	1	9/20/2021 9:04:49 AM
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Analytical Report

Work Order: 2109218
Date Reported: 9/29/2021

Client: Anderson Environmental Contracting

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar

Lab ID: 2109218-002

Matrix: Rock/Gravel

Client Sample ID: Sample #2 Renton concrete recyclers quarry spalls rock 4-8 inch

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Polychlorinated Biphenyls (PCB) by EPA 8082

Batch ID: 33734

Analyst: SB

Aroclor 1016	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Aroclor 1221	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Aroclor 1232	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Aroclor 1242	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Aroclor 1248	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Aroclor 1254	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Aroclor 1260	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Aroclor 1262	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Aroclor 1268	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Total PCBs	ND	0.0487		mg/Kg	1	9/17/2021 5:14:02 PM
Surr: Decachlorobiphenyl	93.4	20.6 - 142		%Rec	1	9/17/2021 5:14:02 PM
Surr: Tetrachloro-m-xylene	125	22 - 157		%Rec	1	9/17/2021 5:14:02 PM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 33733

Analyst: MM

Diesel (Fuel Oil)	ND	48.1		mg/Kg	1	9/17/2021 8:16:44 PM
Heavy Oil	ND	96.2		mg/Kg	1	9/17/2021 8:16:44 PM
Total Petroleum Hydrocarbons	ND	144		mg/Kg	1	9/17/2021 8:16:44 PM
Surr: 2-Fluorobiphenyl	81.8	50 - 150		%Rec	1	9/17/2021 8:16:44 PM
Surr: o-Terphenyl	92.8	50 - 150		%Rec	1	9/17/2021 8:16:44 PM

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 33736

Analyst: IH

Benz(a)anthracene	ND	19.1		µg/Kg	1	9/17/2021 9:34:37 PM
Chrysene	ND	38.2		µg/Kg	1	9/17/2021 9:34:37 PM
Benzo(b)fluoranthene	ND	19.1		µg/Kg	1	9/17/2021 9:34:37 PM
Benzo(k)fluoranthene	ND	19.1		µg/Kg	1	9/17/2021 9:34:37 PM
Benzo(a)pyrene	ND	19.1		µg/Kg	1	9/17/2021 9:34:37 PM
Indeno(1,2,3-cd)pyrene	ND	38.2		µg/Kg	1	9/17/2021 9:34:37 PM
Dibenz(a,h)anthracene	ND	38.2		µg/Kg	1	9/17/2021 9:34:37 PM
Surr: 2-Fluorobiphenyl	85.2	27.9 - 129		%Rec	1	9/17/2021 9:34:37 PM
Surr: Terphenyl-d14 (surr)	112	39.1 - 145		%Rec	1	9/17/2021 9:34:37 PM

Total Metals by EPA Method 6020B

Batch ID: 33748

Analyst: EH

Arsenic	7.35	0.120		mg/Kg	1	9/20/2021 11:04:22 PM
Copper	95.4	1.00		mg/Kg	1	9/20/2021 11:04:22 PM
Lead	0.814	0.200		mg/Kg	1	9/20/2021 11:04:22 PM



Client: Anderson Environmental Contracting

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar

Lab ID: 2109218-002

Matrix: Rock/Gravel

Client Sample ID: Sample #2 Renton concrete recyclers quarry spalls rock 4-8 inch

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Batch ID: 33816

Analyst: EH

Copper	38.0	20.0	D	µg/L	5	9/24/2021 3:49:55 PM
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Client: Anderson Environmental Contracting

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar

Lab ID: 2109218-004

Matrix: Rock/Gravel

Client Sample ID: Renton concrete recyclers quarry spalls rock 4-8 inch: Fraction A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Batch ID: 33864

Analyst: EH

Copper	24.1	5.00	D	µg/L	5	9/28/2021 4:55:09 PM
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NOTES:

Refer to Case Narrative for leaching procedure notes.



Client: Anderson Environmental Contracting

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar

Lab ID: 2109218-005

Matrix: Rock/Gravel

Client Sample ID: Renton concrete recyclers quarry spalls rock 4-8 inch: Fraction B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Batch ID: 33864

Analyst: EH

Copper	22.6	5.00	D	µg/L	5	9/28/2021 5:00:43 PM
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NOTES:

Refer to Case Narrative for leaching procedure notes.



Client: Anderson Environmental Contracting

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar

Lab ID: 2109218-006

Matrix: Rock/Gravel

Client Sample ID: Renton concrete recyclers quarry spalls rock 4-8 inch: Fraction C

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Batch ID: 33864

Analyst: EH

Copper	19.2	5.00	D	µg/L	5	9/28/2021 5:06:18 PM
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NOTES:

Refer to Case Narrative for leaching procedure notes.



Client: Anderson Environmental Contracting

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar

Lab ID: 2109218-007

Matrix: Rock/Gravel

Client Sample ID: Renton concrete recyclers quarry spalls rock 4-8 inch: Fraction D

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Batch ID: 33864

Analyst: EH

Copper	20.1	5.00	D	µg/L	5	9/28/2021 5:11:53 PM
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NOTES:

Refer to Case Narrative for leaching procedure notes.

Work Order: 2109218
CLIENT: Anderson Environmental Contracting
Project: Paccar

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: MB-33748	SampType: MBLK	Units: mg/Kg	Prep Date: 9/20/2021	RunNo: 70015							
Client ID: MBLKS	Batch ID: 33748	Analysis Date: 9/20/2021	SeqNo: 1420275								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	0.120									
Copper	ND	1.00									
Lead	ND	0.200									

Sample ID: LCS-33748	SampType: LCS	Units: mg/Kg	Prep Date: 9/20/2021	RunNo: 70015							
Client ID: LCSS	Batch ID: 33748	Analysis Date: 9/20/2021	SeqNo: 1420277								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	47.4	0.120	50.00	0	94.8	80	120				
Copper	50.6	1.00	50.00	0	101	80	120				
Lead	25.4	0.200	25.00	0	101	80	120				

Sample ID: 2109234-002AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/20/2021	RunNo: 70015							
Client ID: BATCH	Batch ID: 33748	Analysis Date: 9/20/2021	SeqNo: 1420283								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	64.6	0.136	56.79	6.086	103	75	125				
Copper	212	1.14	56.79	144.1	119	75	125				
Lead	55.2	0.227	28.39	34.33	73.6	75	125				S

NOTES:

S - Analyte concentration was too high for accurate spike recovery(ies).

Sample ID: 2109234-002AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/20/2021	RunNo: 70015							
Client ID: BATCH	Batch ID: 33748	Analysis Date: 9/20/2021	SeqNo: 1420286								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	61.9	0.136	56.79	6.086	98.2	75	125	64.65	4.37	20	
Copper	206	1.14	56.79	144.1	110	75	125	212.0	2.65	20	
Lead	64.6	0.227	28.39	34.33	106	75	125	55.22	15.6	20	

Work Order: 2109218
 CLIENT: Anderson Environmental Contracting
 Project: Paccar

QC SUMMARY REPORT
Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Sample ID: MB-33816	SampType: MBLK	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70132							
Client ID: MBLKS	Batch ID: 33816	Analysis Date: 9/24/2021	SeqNo: 1422490								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 4.00

Sample ID: LCS-33816	SampType: LCS	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70132							
Client ID: LCSS	Batch ID: 33816	Analysis Date: 9/24/2021	SeqNo: 1422491								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 107 10.0 100.0 0 107 85 115

Sample ID: 2109341-005BDUP	SampType: DUP	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70132							
Client ID: BATCH	Batch ID: 33816	Analysis Date: 9/24/2021	SeqNo: 1422493								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 10.0 0 30

Sample ID: 2109341-005BMS	SampType: MS	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70132							
Client ID: BATCH	Batch ID: 33816	Analysis Date: 9/24/2021	SeqNo: 1422494								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 516 10.0 500.0 0 103 70 130

Sample ID: 2109341-005BMSD	SampType: MSD	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70132							
Client ID: BATCH	Batch ID: 33816	Analysis Date: 9/24/2021	SeqNo: 1422495								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 519 10.0 500.0 0 104 70 130 516.0 0.570 30

Work Order: 2109218
 CLIENT: Anderson Environmental Contracting
 Project: Paccar

QC SUMMARY REPORT
Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Sample ID: 2109218-002AMS	SampType: MS	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70132							
Client ID: Sample #2 Renton con	Batch ID: 33816	Analysis Date: 9/24/2021	SeqNo: 1422497								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	526	20.0	500.0	38.00	97.7	70	130				D

Sample ID: MB2-33816	SampType: MBLK	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70132							
Client ID: MBLKS	Batch ID: 33816	Analysis Date: 9/24/2021	SeqNo: 1422498								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	20.0									D

Sample ID: MB2-33864	SampType: MBLK	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70198							
Client ID: MBLKS	Batch ID: 33864	Analysis Date: 9/28/2021	SeqNo: 1424180								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	5.00									D

NOTES:
 Filter Blank

Sample ID: 2109218-007AMS	SampType: MS	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70198							
Client ID: Renton concrete recycl	Batch ID: 33864	Analysis Date: 9/28/2021	SeqNo: 1424185								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	156	5.00	100.0	20.12	136	70	130				DS

NOTES:
 S - Outlying spike recoveries were associated with this sample.

Sample ID: MB-33864	SampType: MBLK	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70198							
Client ID: MBLKS	Batch ID: 33864	Analysis Date: 9/28/2021	SeqNo: 1424228								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	10.0									

Work Order: 2109218
CLIENT: Anderson Environmental Contracting
Project: Paccar

QC SUMMARY REPORT
Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Sample ID: LCS-33864	SampType: LCS	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70198							
Client ID: LCSS	Batch ID: 33864		Analysis Date: 9/28/2021	SeqNo: 1424229							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	113	10.0	100.0	0	113	85	115				

Sample ID: 2109397-006GDUP	SampType: DUP	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70198							
Client ID: BATCH	Batch ID: 33864		Analysis Date: 9/28/2021	SeqNo: 1424231							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	10.0						0		30	

Sample ID: 2109397-006GMS	SampType: MS	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70198							
Client ID: BATCH	Batch ID: 33864		Analysis Date: 9/28/2021	SeqNo: 1424232							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	114	10.0	100.0	8.279	106	70	130				

Sample ID: 2109397-006GMSD	SampType: MSD	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70198							
Client ID: BATCH	Batch ID: 33864		Analysis Date: 9/28/2021	SeqNo: 1424235							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	117	10.0	100.0	8.279	108	70	130	114.2	2.10	30	

Work Order: 2109218
CLIENT: Anderson Environmental Contracting
Project: Paccar

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: MB-33733	SampType: MBLK	Units: mg/Kg				Prep Date: 9/17/2021	RunNo: 69996				
Client ID: MBLKS	Batch ID: 33733					Analysis Date: 9/17/2021	SeqNo: 1419162				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Total Petroleum Hydrocarbons	ND	150									
Surr: 2-Fluorobiphenyl	10.1		10.00		101	50	150				
Surr: o-Terphenyl	11.2		10.00		112	50	150				

Sample ID: LCS-33733	SampType: LCS	Units: mg/Kg				Prep Date: 9/17/2021	RunNo: 69996				
Client ID: LCSS	Batch ID: 33733					Analysis Date: 9/17/2021	SeqNo: 1419163				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Petroleum Hydrocarbons	528	150	500.0	0	106	77.2	122				
Surr: 2-Fluorobiphenyl	10.0		10.00		100	50	150				
Surr: o-Terphenyl	12.3		10.00		123	50	150				

Sample ID: 2109160-001AMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 9/17/2021	RunNo: 69996				
Client ID: BATCH	Batch ID: 33733					Analysis Date: 9/17/2021	SeqNo: 1419169				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Petroleum Hydrocarbons	697	181	603.7	0	115	68	132				
Surr: 2-Fluorobiphenyl	10.8		12.07		89.6	50	150				
Surr: o-Terphenyl	14.2		12.07		118	50	150				

Sample ID: 2109160-001AMSD	SampType: MSD	Units: mg/Kg-dry				Prep Date: 9/17/2021	RunNo: 69996				
Client ID: BATCH	Batch ID: 33733					Analysis Date: 9/17/2021	SeqNo: 1419170				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Petroleum Hydrocarbons	600	185	617.1	0	97.2	68	132	696.5	14.9	30	
Surr: 2-Fluorobiphenyl	8.07		12.34		65.4	50	150		0		
Surr: o-Terphenyl	10.8		12.34		87.4	50	150		0		

Work Order: 2109218
CLIENT: Anderson Environmental Contracting
Project: Paccar

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: 2109160-001AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/17/2021	RunNo: 69996							
Client ID: BATCH	Batch ID: 33733	Analysis Date: 9/17/2021	SeqNo: 1419170								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 2109230-003ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/17/2021	RunNo: 69996							
Client ID: BATCH	Batch ID: 33733	Analysis Date: 9/17/2021	SeqNo: 1419175								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	46.7						0		30	
Heavy Oil	ND	93.4						0		30	
Total Petroleum Hydrocarbons	ND	140						0		30	
Surr: 2-Fluorobiphenyl	5.23		9.335		56.0	50	150		0		
Surr: o-Terphenyl	5.75		9.335		61.6	50	150		0		

Work Order: 2109218
 CLIENT: Anderson Environmental Contracting
 Project: Paccar

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: MB-33736	SampType: MBLK	Units: µg/Kg	Prep Date: 9/17/2021	RunNo: 69998							
Client ID: MBLKS	Batch ID: 33736	Analysis Date: 9/17/2021	SeqNo: 1419194								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	20.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	20.0									
Benzo(k)fluoranthene	ND	20.0									
Benzo(a)pyrene	ND	20.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Surr: 2-Fluorobiphenyl	838		1,000		83.8	27.9	129				
Surr: Terphenyl-d14 (surr)	1,130		1,000		113	39.1	145				

Sample ID: LCS-33736	SampType: LCS	Units: µg/Kg	Prep Date: 9/17/2021	RunNo: 69998							
Client ID: LCSS	Batch ID: 33736	Analysis Date: 9/17/2021	SeqNo: 1419195								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	2,150	20.0	2,000	0	108	64.4	113				
Chrysene	2,000	40.0	2,000	0	100	57.3	113				
Benzo(b)fluoranthene	1,950	20.0	2,000	0	97.7	58.2	115				
Benzo(k)fluoranthene	2,120	20.0	2,000	0	106	53.4	121				
Benzo(a)pyrene	2,110	20.0	2,000	0	106	64.7	125				
Indeno(1,2,3-cd)pyrene	1,780	40.0	2,000	0	89.1	61.6	113				
Dibenz(a,h)anthracene	1,900	40.0	2,000	0	94.8	62.1	116				
Surr: 2-Fluorobiphenyl	766		1,000		76.6	27.9	129				
Surr: Terphenyl-d14 (surr)	1,020		1,000		102	39.1	145				

Sample ID: 2109230-003AMS	SampType: MS	Units: µg/Kg-dry	Prep Date: 9/17/2021	RunNo: 69998							
Client ID: BATCH	Batch ID: 33736	Analysis Date: 9/17/2021	SeqNo: 1419199								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1,770	19.0	1,901	9.067	92.6	45	110				

Work Order: 2109218
 CLIENT: Anderson Environmental Contracting
 Project: Paccar

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: 2109230-003AMS		SampType: MS		Units: µg/Kg-dry		Prep Date: 9/17/2021		RunNo: 69998			
Client ID: BATCH		Batch ID: 33736				Analysis Date: 9/17/2021		SeqNo: 1419199			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chrysene	1,620	38.0	1,901	14.09	84.5	42.4	106				
Benzo(b)fluoranthene	1,640	19.0	1,901	3.434	86.3	43.7	108				
Benzo(k)fluoranthene	1,740	19.0	1,901	3.142	91.2	39.5	113				
Benzo(a)pyrene	1,810	19.0	1,901	4.578	95.0	44.1	122				
Indeno(1,2,3-cd)pyrene	1,530	38.0	1,901	0	80.4	40.2	109				
Dibenz(a,h)anthracene	1,610	38.0	1,901	0	84.9	31.4	126				
Surr: 2-Fluorobiphenyl	628		950.5		66.0	27.9	129				
Surr: Terphenyl-d14 (surr)	814		950.5		85.7	39.1	145				

Sample ID: 2109230-003AMSD		SampType: MSD		Units: µg/Kg-dry		Prep Date: 9/17/2021		RunNo: 69998			
Client ID: BATCH		Batch ID: 33736				Analysis Date: 9/17/2021		SeqNo: 1419200			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1,850	19.2	1,918	9.067	96.2	45	110	1,770	4.68	30	
Chrysene	1,690	38.4	1,918	14.09	87.2	42.4	106	1,620	3.97	30	
Benzo(b)fluoranthene	1,660	19.2	1,918	3.434	86.2	43.7	108	1,645	0.747	30	
Benzo(k)fluoranthene	1,900	19.2	1,918	3.142	98.7	39.5	113	1,737	8.74	30	
Benzo(a)pyrene	1,900	19.2	1,918	4.578	98.6	44.1	122	1,810	4.59	30	
Indeno(1,2,3-cd)pyrene	1,600	38.4	1,918	0	83.5	40.2	109	1,529	4.64	30	
Dibenz(a,h)anthracene	1,690	38.4	1,918	0	88.1	31.4	126	1,615	4.56	30	
Surr: 2-Fluorobiphenyl	645		958.9		67.2	27.9	129		0		
Surr: Terphenyl-d14 (surr)	840		958.9		87.6	39.1	145		0		

Work Order: 2109218
 CLIENT: Anderson Environmental Contracting
 Project: Paccar

QC SUMMARY REPORT
Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: MB-33734	SampType: MBLK	Units: mg/Kg	Prep Date: 9/17/2021	RunNo: 69988							
Client ID: MBLKS	Batch ID: 33734		Analysis Date: 9/17/2021	SeqNo: 1418973							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0500									
Aroclor 1221	ND	0.0500									
Aroclor 1232	ND	0.0500									
Aroclor 1242	ND	0.0500									
Aroclor 1248	ND	0.0500									
Aroclor 1254	ND	0.0500									
Aroclor 1260	ND	0.0500									
Aroclor 1262	ND	0.0500									
Aroclor 1268	ND	0.0500									
Total PCBs	ND	0.0500									
Surr: Decachlorobiphenyl	249		200.0		124	20.6	142				
Surr: Tetrachloro-m-xylene	256		200.0		128	22	157				

Sample ID: LCS1-33734	SampType: LCS	Units: mg/Kg	Prep Date: 9/17/2021	RunNo: 69988							
Client ID: LCSS	Batch ID: 33734		Analysis Date: 9/17/2021	SeqNo: 1418974							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	1.06	0.0500	1.000	0	106	52.2	136				
Aroclor 1260	1.08	0.0500	1.000	0	108	50.5	150				
Surr: Decachlorobiphenyl	219		200.0		109	20.6	142				
Surr: Tetrachloro-m-xylene	245		200.0		122	22	157				

Sample ID: LCS2-33734	SampType: LCS	Units: mg/Kg	Prep Date: 9/17/2021	RunNo: 69988							
Client ID: LCSS	Batch ID: 33734		Analysis Date: 9/17/2021	SeqNo: 1418975							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1254	1.25	0.0500	1.000	0	125	48.1	147				
Surr: Decachlorobiphenyl	247		200.0		123	20.6	142				
Surr: Tetrachloro-m-xylene	255		200.0		128	22	157				

Work Order: 2109218
CLIENT: Anderson Environmental Contracting
Project: Paccar

QC SUMMARY REPORT
Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: LCS2-33734	SampType: LCS	Units: mg/Kg	Prep Date: 9/17/2021	RunNo: 69988							
Client ID: LCSS	Batch ID: 33734		Analysis Date: 9/17/2021	SeqNo: 1418975							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 2109220-020AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/17/2021	RunNo: 69988							
Client ID: BATCH	Batch ID: 33734		Analysis Date: 9/17/2021	SeqNo: 1418977							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.994	0.0394	0.7885	0	126	38.6	146				
Aroclor 1260	0.940	0.0394	0.7885	0	119	24.6	161				
Surr: Decachlorobiphenyl	113		157.7		71.8	20.6	142				
Surr: Tetrachloro-m-xylene	126		157.7		79.8	22	157				

Sample ID: 2109220-020AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/17/2021	RunNo: 69988							
Client ID: BATCH	Batch ID: 33734		Analysis Date: 9/17/2021	SeqNo: 1418978							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	1.08	0.0406	0.8126	0	133	38.6	146	0.9945	8.22	30	
Aroclor 1260	1.12	0.0406	0.8126	0	138	24.6	161	0.9398	17.6	30	
Surr: Decachlorobiphenyl	134		162.5		82.5	20.6	142		0		
Surr: Tetrachloro-m-xylene	144		162.5		88.4	22	157		0		

Client Name: AEC	Work Order Number: 2109218
Logged by: Gabrielle Coeuille	Date Received: 9/15/2021 4:00:00 PM

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
- No cooler present**
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
- Unknown prior to receipt**
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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	23.6

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



3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: _____ Page: _____ of: _____
Project Name: **Paccar**

Laboratory Project No (Internal): **2109218**
Special Remarks:
Update per CN 9/16/21 - gac

Client: **AEC**

Project No: _____

Collected by: _____

Location: _____

Report To (PM): **Craig Nelson**
PM Email: **Craig Nelson <craign@aecll.net>**

Sample Disposal: Return to client Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	Analytes														Comments
					VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCD)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8270 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)**	EDB (8011)			
Sample #1 Renton concrete 1 recyclers 3/4 inch minus	9/15/21	12:00	SI				X	X	X	X									CPAHs
Sample #2 Renton concrete 2 recyclers quarry spalls rock 4-8 inch	9/15/21	12:00	SI				X	X	X										cPAHs
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water
 Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al **As B Ba Be Ca Cd Co Cr **Cu** Fe Hg K Mg Mn Mo Na Ni **Pb** Sb Se Sr Sn Ti Tl V Zn
 ***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide Iodide O-phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Turn-around Time:
 Standard Next Day
 3 Day Same Day ASAP (Specify)
 2 Day

Relinquished (Signature): *Craig Nelson* Print Name: **Craig Nelson** Date/Time: **9-16-21**
 Received (Signature): *[Signature]* Print Name: _____ Date/Time: _____
 Relinquished (Signature): _____ Print Name: _____ Date/Time: _____

Attachment E-11

Area 5 Water, Chemical Results, Fremont Analytical, Inc., Work Order No. 2109439

APPENDIX E: IMPORTED FILL, SELECTION, PLACEMENT, AND COMPACTION



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

Shannon & Wilson
Ryan Peterson
400 N. 34th Street, Suite 100
Seattle, WA 98103

RE: 8801 - Excavations
Work Order Number: 2109439

September 30, 2021

Attention Ryan Peterson:

Fremont Analytical, Inc. received 1 sample(s) on 9/27/2021 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8
Total Metals by EPA Method 200.8

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

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

www.fremontanalytical.com



CLIENT: Shannon & Wilson
Project: 8801 - Excavations
Work Order: 2109439

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2109439-001	A5-GW	09/27/2021 2:00 PM	09/27/2021 2:59 PM

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

CLIENT: Shannon & Wilson
Project: 8801 - Excavations

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:

- * - Associated LCS is outside of 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 Method Detection 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



Client: Shannon & Wilson

Collection Date: 9/27/2021 2:00:00 PM

Project: 8801 - Excavations

Lab ID: 2109439-001

Matrix: Water

Client Sample ID: A5-GW

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
<u>Dissolved Metals by EPA Method 200.8</u>				Batch ID: 33819		Analyst: EH	
Copper	20.0	4.00	2.13	D	µg/L	2	09/29/21 20:29:04
<u>Total Metals by EPA Method 200.8</u>				Batch ID: 33854		Analyst: EH	
Copper	49.6	10.0	0.777	D	µg/L	5	09/29/21 14:08:47

Work Order: 2109439
 CLIENT: Shannon & Wilson
 Project: 8801 - Excavations

QC SUMMARY REPORT
Dissolved Metals by EPA Method 200.8

Sample ID: MB-33819	SampType: MBLK	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70205							
Client ID: MBLKW	Batch ID: 33819		Analysis Date: 9/28/2021	SeqNo: 1424344							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 2.00

Sample ID: 2109341-003CMS	SampType: MS	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70205							
Client ID: BATCH	Batch ID: 33819		Analysis Date: 9/28/2021	SeqNo: 1424348							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 538 2.00 500.0 0 108 70 130

Sample ID: 2109341-003CMSD	SampType: MSD	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70205							
Client ID: BATCH	Batch ID: 33819		Analysis Date: 9/28/2021	SeqNo: 1424349							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 534 2.00 500.0 0 107 70 130 538.5 0.869 30

Sample ID: MB-33818FB	SampType: MBLK	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70205							
Client ID: MBLKW	Batch ID: 33819		Analysis Date: 9/29/2021	SeqNo: 1425186							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 2.00

NOTES:
 Filter Blank

Sample ID: LCS-33819	SampType: LCS	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70205							
Client ID: LCSW	Batch ID: 33819		Analysis Date: 9/29/2021	SeqNo: 1425187							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 106 2.00 100.0 0 106 85 115



Work Order: 2109439
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT
Dissolved Metals by EPA Method 200.8

Sample ID: 2109341-003CDUP	SampType: DUP	Units: µg/L	Prep Date: 9/24/2021	RunNo: 70205							
Client ID: BATCH	Batch ID: 33819	Analysis Date: 9/29/2021	SeqNo: 1425189								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	2.00						1.078	200	30	

Work Order: 2109439
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT
Total Metals by EPA Method 200.8

Sample ID: MB-33854	SampType: MBLK	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70209							
Client ID: MBLKW	Batch ID: 33854		Analysis Date: 9/28/2021	SeqNo: 1424451							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 2.00

Sample ID: LCS-33854	SampType: LCS	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70209							
Client ID: LCSW	Batch ID: 33854		Analysis Date: 9/28/2021	SeqNo: 1424452							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 105 2.00 100.0 0 105 85 115

Sample ID: 2109423-002AMS	SampType: MS	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70209							
Client ID: BATCH	Batch ID: 33854		Analysis Date: 9/29/2021	SeqNo: 1424464							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 126 2.00 100.0 8.246 118 70 130

Sample ID: 2109423-002AMSD	SampType: MSD	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70209							
Client ID: BATCH	Batch ID: 33854		Analysis Date: 9/29/2021	SeqNo: 1424465							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 130 2.00 100.0 8.246 122 70 130 125.9 3.37 30

Sample ID: MB-33854	SampType: MBLK	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70209							
Client ID: MBLKW	Batch ID: 33854		Analysis Date: 9/29/2021	SeqNo: 1424791							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 2.00



Work Order: 2109439
CLIENT: Shannon & Wilson
Project: 8801 - Excavations

QC SUMMARY REPORT
Total Metals by EPA Method 200.8

Sample ID: 2109423-002ADUP	SampType: DUP	Units: µg/L	Prep Date: 9/28/2021	RunNo: 70209							
Client ID: BATCH	Batch ID: 33854	Analysis Date: 9/29/2021	SeqNo: 1424794								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	8.00	2.00						8.246	2.99	30	

Client Name: SW	Work Order Number: 2109439
Logged by: Clare Griggs	Date Received: 9/27/2021 2:59:00 PM

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 * Unknown prior to receipt. 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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	15.6

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

Attachment E-12

Quarry Spall, #2 Modified SPLP Results, Fremont Analytical, Inc., Work Order No. 2110053

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



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

Shannon & Wilson

Meg Strong
400 N. 34th Street, Suite 100
Seattle, WA 98103

RE: Paccar - Anderson
Work Order Number: 2110053

October 13, 2021

Attention Meg Strong:

Fremont Analytical, Inc. received 2 sample(s) on 10/4/2021 for the analyses presented in the following report.

Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

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

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

www.fremontanalytical.com



Date: 10/13/2021

CLIENT: Shannon & Wilson
Project: Paccar - Anderson
Work Order: 2110053

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2110053-001	Renton Concrete Recyclers Quarry Spal	09/15/2021 12:00 PM	09/17/2021 2:34 PM
2110053-002	Renton Concrete Recyclers Quarry Spal	09/15/2021 12:00 PM	09/17/2021 2:34 PM

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

Original

CLIENT: Shannon & Wilson

Project: Paccar - Anderson

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.

Note: This report contains results for two pieces of a single source of rock processed by a modified SPLP method, as follows. Two pieces of rock were selected and processed "as received," i.e. particle size was not reduced. Samples were ~4-6" per side. Per project scope and client request, samples were tumbled in laboratory DI water. They were otherwise treated according to typical SPLP procedure, including tumbling and filtration prior to analysis for copper by ICP-MS.

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



Client: Shannon & Wilson

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar - Anderson

Lab ID: 2110053-001

Matrix: Solid

Client Sample ID: Renton Concrete Recyclers Quarry Spalls 4-8" A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Batch ID: 33974

Analyst: EH

Copper	ND	4.00	D	µg/L	2	10/12/2021 6:51:47 PM
--------	----	------	---	------	---	-----------------------



Client: Shannon & Wilson

Collection Date: 9/15/2021 12:00:00 PM

Project: Paccar - Anderson

Lab ID: 2110053-002

Matrix: Solid

Client Sample ID: Renton Concrete Recyclers Quarry Spalls 4-8" B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Batch ID: 33974

Analyst: EH

Copper	ND	4.00	D	µg/L	2	10/12/2021 6:49:27 PM
--------	----	------	---	------	---	-----------------------

Work Order: 2110053
CLIENT: Shannon & Wilson
Project: Paccar - Anderson

QC SUMMARY REPORT
Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Sample ID: MB-33974	SampType: MBLK	Units: µg/L	Prep Date: 10/7/2021	RunNo: 70506							
Client ID: MBLKS	Batch ID: 33974		Analysis Date: 10/12/2021	SeqNo: 1432098							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 10.0

Sample ID: LCS-33974	SampType: LCS	Units: µg/L	Prep Date: 10/7/2021	RunNo: 70506							
Client ID: LCSS	Batch ID: 33974		Analysis Date: 10/12/2021	SeqNo: 1432099							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 108 10.0 100.0 0 108 85 115

Sample ID: 2110088-009BDUP	SampType: DUP	Units: µg/L	Prep Date: 10/7/2021	RunNo: 70506							
Client ID: BATCH	Batch ID: 33974		Analysis Date: 10/12/2021	SeqNo: 1432103							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 10.0 0 30

Sample ID: 2110088-009BMS	SampType: MS	Units: µg/L	Prep Date: 10/7/2021	RunNo: 70506							
Client ID: BATCH	Batch ID: 33974		Analysis Date: 10/12/2021	SeqNo: 1432104							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 99.4 10.0 100.0 0.3848 99.0 70 130

Sample ID: 2110088-009BMSD	SampType: MSD	Units: µg/L	Prep Date: 10/7/2021	RunNo: 70506							
Client ID: BATCH	Batch ID: 33974		Analysis Date: 10/12/2021	SeqNo: 1432105							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 99.1 10.0 100.0 0.3848 98.7 70 130 99.39 0.319 30

Work Order: 2110053
CLIENT: Shannon & Wilson
Project: Paccar - Anderson

QC SUMMARY REPORT
Metals (EPA 200.8) with SPLP Extraction (EPA 1312)

Sample ID: MB2-33974	SampType: MBLK	Units: µg/L	Prep Date: 10/7/2021	RunNo: 70506							
Client ID: MBLKS	Batch ID: 33974		Analysis Date: 10/12/2021	SeqNo: 1432113							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	ND	2.00									
--------	----	------	--	--	--	--	--	--	--	--	--

NOTES:
 SPLP Filter Blank

Client Name: **SW**

 Work Order Number: **2110053**

 Logged by: **Matt Langston**

 Date Received: **10/4/2021 5:28:04 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Lab Generated

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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

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

Attachment E-13

Quarry Spall, TCLP Results, ALS Environmental, Work Order No. EV22020128

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



February 28, 2022

Mr. Lee Langley
Iron Mountain Quarry
22121 - 17th Ave SE, Suite 117
Bothell, WA 98021-7404

Dear Mr. Langley,

On February 23rd, 3 samples were received by our laboratory and assigned our laboratory project number EV22020128. The project was identified as your Screenings. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Glen Perry
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Iron Mountain Quarry DATE: 2/28/2022
22121 - 17th Ave SE, Suite 117 ALS JOB#: EV22020128
Bothell, WA 98021-7404 ALS SAMPLE#: EV22020128-01
CLIENT CONTACT: Lee Langley DATE RECEIVED: 02/23/2022
CLIENT PROJECT: Screenings COLLECTION DATE: 2/23/2022 10:30:00 AM
CLIENT SAMPLE ID: SCR Belt WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (TCLP)	EPA-7470/1311	U	0.00020	1	MG/L	02/24/2022	RAL
Arsenic (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Barium (TCLP)	EPA-6020/1311	0.12	0.031	6.25	MG/L	02/24/2022	RAL
Cadmium (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Chromium (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Lead (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Selenium (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Silver (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Iron Mountain Quarry 22121 - 17th Ave SE, Suite 117 Bothell, WA 98021-7404	DATE:	2/28/2022
CLIENT CONTACT:	Lee Langley	ALS JOB#:	EV22020128
CLIENT PROJECT:	Screenings	ALS SAMPLE#:	EV22020128-02
CLIENT SAMPLE ID	SCR Stock 1	DATE RECEIVED:	02/23/2022
		COLLECTION DATE:	2/23/2022 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (TCLP)	EPA-7470/1311	U	0.00020	1	MG/L	02/24/2022	RAL
Arsenic (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Barium (TCLP)	EPA-6020/1311	0.14	0.031	6.25	MG/L	02/24/2022	RAL
Cadmium (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Chromium (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Lead (TCLP)	EPA-6020/1311	0.16	0.031	6.25	MG/L	02/24/2022	RAL
Selenium (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Silver (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Iron Mountain Quarry 22121 - 17th Ave SE, Suite 117 Bothell, WA 98021-7404	DATE:	2/28/2022
CLIENT CONTACT:	Lee Langley	ALS JOB#:	EV22020128
CLIENT PROJECT:	Screenings	ALS SAMPLE#:	EV22020128-03
CLIENT SAMPLE ID	SCR Stock 2	DATE RECEIVED:	02/23/2022
		COLLECTION DATE:	2/23/2022 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (TCLP)	EPA-7470/1311	U	0.00020	1	MG/L	02/24/2022	RAL
Arsenic (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Barium (TCLP)	EPA-6020/1311	0.15	0.031	6.25	MG/L	02/24/2022	RAL
Cadmium (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Chromium (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Lead (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Selenium (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL
Silver (TCLP)	EPA-6020/1311	U	0.031	6.25	MG/L	02/24/2022	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Iron Mountain Quarry 22121 - 17th Ave SE, Suite 117 Bothell, WA 98021-7404	DATE: 2/28/2022 ALS SDG#: EV22020128 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Lee Langley	
CLIENT PROJECT:	Screenings	

LABORATORY BLANK RESULTS

MBLK-R403202 - Batch R403202 - TCLP Extract by EPA-7470

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	MG/L	0.00020	02/24/2022	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R403204 - Batch R403204 - TCLP Extract by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/L	0.0050	02/24/2022	RAL
Barium	EPA-6020	U	MG/L	0.0050	02/24/2022	RAL
Cadmium	EPA-6020	U	MG/L	0.0050	02/24/2022	RAL
Chromium	EPA-6020	U	MG/L	0.0050	02/24/2022	RAL
Lead	EPA-6020	U	MG/L	0.0050	02/24/2022	RAL
Selenium	EPA-6020	U	MG/L	0.0050	02/24/2022	RAL
Silver	EPA-6020	U	MG/L	0.0050	02/24/2022	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Iron Mountain Quarry 22121 - 17th Ave SE, Suite 117 Bothell, WA 98021-7404	DATE:	2/28/2022
CLIENT CONTACT:	Lee Langley	ALS SDG#:	EV22020128
CLIENT PROJECT:	Screenings	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R403202 - TCLP Extract by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-7470	98.4			85	115	02/24/2022	RAL
Mercury - BSD	EPA-7470	99.2	1		85	115	02/24/2022	RAL

ALS Test Batch ID: R403204 - TCLP Extract by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	95.0			89.1	110	02/24/2022	RAL
Arsenic - BSD	EPA-6020	96.0	1		89.1	110	02/24/2022	RAL
Barium - BS	EPA-6020	96.0			88.5	108	02/24/2022	RAL
Barium - BSD	EPA-6020	95.0	1		88.5	108	02/24/2022	RAL
Cadmium - BS	EPA-6020	98.0			89.4	109	02/24/2022	RAL
Cadmium - BSD	EPA-6020	98.0	0		89.4	109	02/24/2022	RAL
Chromium - BS	EPA-6020	95.0			86.2	107	02/24/2022	RAL
Chromium - BSD	EPA-6020	95.0	0		86.2	107	02/24/2022	RAL
Lead - BS	EPA-6020	91.0			87.5	107	02/24/2022	RAL
Lead - BSD	EPA-6020	92.0	1		87.5	107	02/24/2022	RAL
Selenium - BS	EPA-6020	96.0			90.2	113	02/24/2022	RAL
Selenium - BSD	EPA-6020	96.0	0		90.2	113	02/24/2022	RAL
Silver - BS	EPA-6020	99.0			80	120	02/24/2022	RAL
Silver - BSD	EPA-6020	99.0	0		80	120	02/24/2022	RAL

APPROVED BY

Laboratory Director



ALS Environmental
 8620 Holly Drive, Suite 100
 Everett, WA 98208
 Phone (425) 356-2600
 Fax (425) 356-2626
<http://www.alsglobal.com>

Chain of Custody/ Laboratory Analysis Request

ALS Job#

(Laboratory Use Only)

EV22020128

Date _____ Page _____ Of _____

PROJECT ID: REPORT TO COMPANY: PROJECT MANAGER: ADDRESS: PHONE: E-MAIL: INVOICE TO COMPANY: ATTENTION: ADDRESS:	ANALYSIS REQUESTED				Date		Page		Of								
	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 <input type="checkbox"/> MTBE by EPA 8260 <input type="checkbox"/>	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 <input type="checkbox"/> Pesticides by EPA 8081 <input type="checkbox"/>	Metals-MTCA-5 <input type="checkbox"/> RCRA-8 <input type="checkbox"/> Pfl Pol <input type="checkbox"/> TAL <input type="checkbox"/>	Metals Other (Specify)	TCLP-Metals <input checked="" type="checkbox"/> VOA <input type="checkbox"/> Semi-Vol <input type="checkbox"/> Pest <input type="checkbox"/> Herbs <input type="checkbox"/>	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. SCR Belt																	
2. SCR STOCK 1																	
3. SCR STOCK 2																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
 1. Relinquished By: [Signature] 2/23/22 11:30
 Received By: [Signature] 2/23/22 11:30
 2. Relinquished By: _____
 Received By: _____

TURNAROUND REQUESTED in Business Days*
 OTHER: _____
 Specify: _____
 Organic, Metals & Inorganic Analysis
 10 Standard 5 3 2 1 SAME DNY
 Fuels & Hydrocarbon Analysis
 5 Standard 3 1 SAME DNY

*Turnaround request less than standard may incur Rush Charges

Attachment E-14

Quarry Spall, ALS Environmental, Work Order No. EV22070110

CONTENTS

- Sample ID "PAC-S1" is a sample of 4-inch-minus gravel borrow from King Creek Pit in Orting, Washington, operated by Washington Rock Quarries, Inc.
- Sample ID "PAC-S2" is a sample of quarry spalls from the Granite Falls Quarry in Granite Falls, Washington, operated by Iron Mountain Quarry, LLC



August 8, 2022

Mr. Kelly Kellogg
Anderson Environmental Contracting
705 Colorado St
Kelso, WA 98626

Dear Mr. Kellogg,

On July 27th, 2 samples were received by our laboratory and assigned our laboratory project number EV22070110. The project was identified as your Paccar. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Glen Perry
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Anderson Environmental Contracting
 705 Colorado St
 Kelso, WA 98626

CLIENT CONTACT: Kelly Kellogg
 CLIENT PROJECT: Paccar
 CLIENT SAMPLE ID: PAC-S1

DATE: 8/8/2022
 ALS JOB#: EV22070110
 ALS SAMPLE#: EV22070110-01
 DATE RECEIVED: 07/27/2022
 COLLECTION DATE: 7/22/2022 11:30:00 AM
 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/04/2022	KLS
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	08/05/2022	JNF
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	08/05/2022	JNF
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
Chlordane	EPA-8082	U	0.50	1	MG/KG	08/08/2022	JMK
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
Total PCBs	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
Arsenic	EPA-6020	4.1	0.20	1	MG/KG	08/05/2022	RAL
Copper	EPA-6020	27	0.10	1	MG/KG	08/05/2022	RAL
Lead	EPA-6020	3.0	0.10	1	MG/KG	08/05/2022	RAL

SURROGATE	METHOD	%REC	ANALYSIS ANALYSIS	
			DATE	BY
TFT	NWTPH-GX	92.2	08/04/2022	KLS
C25	NWTPH-DX	82.3	08/05/2022	JNF

CERTIFICATE OF ANALYSIS

CLIENT:	Anderson Environmental Contracting 705 Colorado St Kelso, WA 98626	DATE:	8/8/2022
CLIENT CONTACT:	Kelly Kellogg	ALS JOB#:	EV22070110
CLIENT PROJECT:	Paccar	ALS SAMPLE#:	EV22070110-01
CLIENT SAMPLE ID	PAC-S1	DATE RECEIVED:	07/27/2022
		COLLECTION DATE:	7/22/2022 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS ANALYSIS	
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	130	08/08/2022	JMK
TCMX	EPA-8082	88.6	08/08/2022	JMK
DCB	EPA-8082	108	08/08/2022	JMK

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Anderson Environmental Contracting	DATE:	8/8/2022
	705 Colorado St	ALS JOB#:	EV22070110
	Kelso, WA 98626	ALS SAMPLE#:	EV22070110-02
CLIENT CONTACT:	Kelly Kellogg	DATE RECEIVED:	07/27/2022
CLIENT PROJECT:	Paccar	COLLECTION DATE:	7/22/2022 11:30:00 AM
CLIENT SAMPLE ID	PAC-S2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/04/2022	KLS
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	08/05/2022	JNF
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	08/05/2022	JNF
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Phenanthrene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2022	JMK
Anthracene	EPA-8270 SIM	23	20	1	UG/KG	08/08/2022	JMK
Fluoranthene	EPA-8270 SIM	160	20	1	UG/KG	08/08/2022	JMK
Pyrene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2022	JMK
Benzo[A]Anthracene	EPA-8270 SIM	47	20	1	UG/KG	08/08/2022	JMK
Chrysene	EPA-8270 SIM	68	20	1	UG/KG	08/08/2022	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	62	20	1	UG/KG	08/08/2022	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	26	20	1	UG/KG	08/08/2022	JMK
Benzo[A]Pyrene	EPA-8270 SIM	23	20	1	UG/KG	08/08/2022	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2022	JMK
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
Chlordane	EPA-8082	U	0.50	1	MG/KG	08/08/2022	JMK
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
Total PCBs	EPA-8082	U	0.10	1	MG/KG	08/08/2022	JMK
Arsenic	EPA-6020	13	0.20	1	MG/KG	08/05/2022	RAL
Copper	EPA-6020	88	0.10	1	MG/KG	08/05/2022	RAL
Lead	EPA-6020	8.6	0.10	1	MG/KG	08/05/2022	RAL

SURROGATE	METHOD	%REC	ANALYSIS ANALYSIS	
			DATE	BY
TFT	NWTPH-GX	93.8	08/04/2022	KLS
C25	NWTPH-DX	88.0	08/05/2022	JNF

CERTIFICATE OF ANALYSIS

CLIENT:	Anderson Environmental Contracting 705 Colorado St Kelso, WA 98626	DATE:	8/8/2022
CLIENT CONTACT:	Kelly Kellogg	ALS JOB#:	EV22070110
CLIENT PROJECT:	Paccar	ALS SAMPLE#:	EV22070110-02
CLIENT SAMPLE ID	PAC-S2	DATE RECEIVED:	07/27/2022
		COLLECTION DATE:	7/22/2022 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS ANALYSIS	
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	139	08/08/2022	JMK
TCMX	EPA-8082	91.8	08/08/2022	JMK
DCB	EPA-8082	112	08/08/2022	JMK

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Anderson Environmental Contracting
 705 Colorado St
 Kelso, WA 98626
 CLIENT CONTACT: Kelly Kellogg
 CLIENT PROJECT: Paccar

DATE: 8/8/2022
 ALS SDG#: EV22070110
 WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MBG-080422S - Batch 182052 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	08/04/2022	KLS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080422S - Batch 182114 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	08/05/2022	JNF
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	08/05/2022	JNF

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080422S - Batch 182095 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Acenaphthylene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Acenaphthene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Fluorene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Phenanthrene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Anthracene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Pyrene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Chrysene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	UG/KG	20	08/08/2022	JMK

SURROGATE	METHOD	%REC	CONTROL LIMITS		ANALYSIS DATE	ANALYSIS BY
			MIN	MAX		
Terphenyl-d14	EPA-8270 SIM	181 S	28.9	157	08/08/2022	JMK

S - Outside of control limits.

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Anderson Environmental Contracting
 705 Colorado St
 Kelso, WA 98626

CLIENT CONTACT: Kelly Kellogg
 CLIENT PROJECT: Paccar

DATE: 8/8/2022
 ALS SDG#: EV22070110
 WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-080422S - Batch 182148 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	UNITS	REPORTING	ANALYSIS	ANALYSIS
				LIMITS	DATE	BY
PCB-1016	EPA-8082	U	MG/KG	0.10	08/08/2022	JMK
PCB-1221	EPA-8082	U	MG/KG	0.10	08/08/2022	JMK
PCB-1232	EPA-8082	U	MG/KG	0.10	08/08/2022	JMK
PCB-1242	EPA-8082	U	MG/KG	0.10	08/08/2022	JMK
PCB-1248	EPA-8082	U	MG/KG	0.10	08/08/2022	JMK
PCB-1254	EPA-8082	U	MG/KG	0.10	08/08/2022	JMK
PCB-1260	EPA-8082	U	MG/KG	0.10	08/08/2022	JMK
Chlordane	EPA-8082	U	MG/KG	0.50	08/08/2022	JMK
PCB-1268	EPA-8082	U	MG/KG	0.10	08/08/2022	JMK
Total PCBs	EPA-8082	U	MG/KG	0.10	08/08/2022	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080522S - Batch 181940 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING	ANALYSIS	ANALYSIS
				LIMITS	DATE	BY
Arsenic	EPA-6020	U	MG/KG	0.20	08/05/2022	RAL
Copper	EPA-6020	U	MG/KG	0.10	08/05/2022	RAL
Lead	EPA-6020	U	MG/KG	0.10	08/05/2022	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Anderson Environmental Contracting
 705 Colorado St
 Kelso, WA 98626
 CLIENT CONTACT: Kelly Kellogg
 CLIENT PROJECT: Paccar

DATE: 8/8/2022
 ALS SDG#: EV22070110
 WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 182052 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	92.2			66.5	122.7	08/04/2022	KLS
TPH-Volatile Range - BSD	NWTPH-GX	92.6	0		66.5	122.7	08/04/2022	KLS

ALS Test Batch ID: 182114 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	109			75.5	122.1	08/05/2022	JNF
TPH-Diesel Range - BSD	NWTPH-DX	103	6		75.5	122.1	08/05/2022	JNF

ALS Test Batch ID: 182095 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Naphthalene - BS	EPA-8270 SIM	112			20	150	08/08/2022	JMK
Naphthalene - BSD	EPA-8270 SIM	92.3	19		20	150	08/08/2022	JMK
2-Methylnaphthalene - BS	EPA-8270 SIM	110			20	150	08/08/2022	JMK
2-Methylnaphthalene - BSD	EPA-8270 SIM	90.6	19		20	150	08/08/2022	JMK
1-Methylnaphthalene - BS	EPA-8270 SIM	107			20	150	08/08/2022	JMK
1-Methylnaphthalene - BSD	EPA-8270 SIM	89.1	18		20	150	08/08/2022	JMK
Acenaphthylene - BS	EPA-8270 SIM	112			20	150	08/08/2022	JMK
Acenaphthylene - BSD	EPA-8270 SIM	91.5	20		20	150	08/08/2022	JMK
Acenaphthene - BS	EPA-8270 SIM	113		SQ1	41	107	08/08/2022	JMK
Acenaphthene - BSD	EPA-8270 SIM	93.1	19	SR1	41	107	08/08/2022	JMK
Fluorene - BS	EPA-8270 SIM	116			20	150	08/08/2022	JMK
Fluorene - BSD	EPA-8270 SIM	95.3	20		20	150	08/08/2022	JMK
Phenanthrene - BS	EPA-8270 SIM	114			20	150	08/08/2022	JMK
Phenanthrene - BSD	EPA-8270 SIM	95.0	18		20	150	08/08/2022	JMK
Anthracene - BS	EPA-8270 SIM	114			20	150	08/08/2022	JMK
Anthracene - BSD	EPA-8270 SIM	94.7	18		20	150	08/08/2022	JMK
Fluoranthene - BS	EPA-8270 SIM	114			20	150	08/08/2022	JMK
Fluoranthene - BSD	EPA-8270 SIM	93.2	20		20	150	08/08/2022	JMK
Pyrene - BS	EPA-8270 SIM	121			18	136	08/08/2022	JMK
Pyrene - BSD	EPA-8270 SIM	99.1	20		18	136	08/08/2022	JMK
Benzo[A]Anthracene - BS	EPA-8270 SIM	116			20	150	08/08/2022	JMK
Benzo[A]Anthracene - BSD	EPA-8270 SIM	91.3	23		20	150	08/08/2022	JMK
Chrysene - BS	EPA-8270 SIM	117			20	150	08/08/2022	JMK
Chrysene - BSD	EPA-8270 SIM	96.7	19		20	150	08/08/2022	JMK
Benzo[B]Fluoranthene - BS	EPA-8270 SIM	112			20	150	08/08/2022	JMK
Benzo[B]Fluoranthene - BSD	EPA-8270 SIM	92.1	20		20	150	08/08/2022	JMK
Benzo[K]Fluoranthene - BS	EPA-8270 SIM	115			20	150	08/08/2022	JMK



CERTIFICATE OF ANALYSIS

CLIENT: Anderson Environmental Contracting
 705 Colorado St
 Kelso, WA 98626

CLIENT CONTACT: Kelly Kellogg
 CLIENT PROJECT: Paccar

DATE: 8/8/2022
 ALS SDG#: EV22070110
 WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Benzo[K]Fluoranthene - BSD	EPA-8270 SIM	94.7	19		20	150	08/08/2022	JMK
Benzo[A]Pyrene - BS	EPA-8270 SIM	99.8			20	150	08/08/2022	JMK
Benzo[A]Pyrene - BSD	EPA-8270 SIM	82.0	20		20	150	08/08/2022	JMK
Indeno[1,2,3-Cd]Pyrene - BS	EPA-8270 SIM	115			20	150	08/08/2022	JMK
Indeno[1,2,3-Cd]Pyrene - BSD	EPA-8270 SIM	93.0	21		20	150	08/08/2022	JMK
Dibenz[A,H]Anthracene - BS	EPA-8270 SIM	108			20	150	08/08/2022	JMK
Dibenz[A,H]Anthracene - BSD	EPA-8270 SIM	87.4	21		20	150	08/08/2022	JMK
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	107			20	150	08/08/2022	JMK
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	87.9	19		20	150	08/08/2022	JMK

SURROGATE	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Terphenyl-d14 - BS	EPA-8270 SIM	139		S	58	132	08/08/2022	JMK

S - Outside of control limits.
 SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.
 SR1 - RPD outside of control limits.

ALS Test Batch ID: 182148 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
PCB-1016 - BS	EPA-8082	62.6			50	150	08/08/2022	JMK
PCB-1016 - BSD	EPA-8082	65.8	5		50	150	08/08/2022	JMK
PCB-1260 - BS	EPA-8082	68.8			50	150	08/08/2022	JMK
PCB-1260 - BSD	EPA-8082	74.5	8		50	150	08/08/2022	JMK

ALS Test Batch ID: 181940 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	99.6			80	120	08/05/2022	RAL
Arsenic - BSD	EPA-6020	97.2	2		80	120	08/05/2022	RAL
Copper - BS	EPA-6020	105			80	120	08/05/2022	RAL
Copper - BSD	EPA-6020	102	3		80	120	08/05/2022	RAL
Lead - BS	EPA-6020	98.4			80	120	08/05/2022	RAL
Lead - BSD	EPA-6020	96.1	2		80	120	08/05/2022	RAL

APPROVED BY

Laboratory Director



CHAIN OF CUSTODY

22070110 SR#

1317 South 13th Ave., Kelso, WA 98626 | +1 360 577 7222 | +1 800 695 7222 | +1 360 636 1068 (fax)

PAGE _____ OF _____ COC# _____

PROJECT NAME	PAKLAR				
PROJECT NUMBER	21-0045				
PROJECT MANAGER	Kelly Kellogg				
COMPANY NAME	AEC				
ADDRESS	705 Colorado St.				
CITY/STATE/ZIP	Kelso WA 98626				
E-MAIL ADDRESS	kellyk@aecllc.net				
PHONE #	360 957 1769		FAX #		
SAMPLER'S SIGNATURE					

NUMBER OF CONTAINERS

- Semivolatile Organics by GC/MS
625 8270 8270LL SIM PAH
- Volatile Organics
624 8260 8021 BTEX
- Hydrocarbons (*see below)
Gas Diesel Oil
- Oil & Grease/TRPH
1664 HEM 1664 SGT
- PCBs
Aroclors 8082
- Pesticides/Herbicides
608 8091 8141 8151
- Chlorophenolics
Tri Tetra
- Metals, Total or Dissolved
(See List below) PCP
- Cyanide Hex-Chrom
- (circle) pH, Cond., Cl, SO₄, PO₄, F, NO₂, NO₃, BOD, TSS, TDS, Turb.
- (circle) NH₃-N, COD, TKN, TOC, DOC, NO₂+NO₃, T-Phos
- TOX 9020 AOX 1650 506
- Alkalinity CO₃ HCO₃
- Dioxins/Furans
1613 8290
- Dissolved Gases
RSK 175 Methane Ethane
- PAH 8270

REMARKS

1
2

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS	Volatile Organics	Hydrocarbons	Oil & Grease/TRPH	PCBs	Aroclors	Pesticides/Herbicides	Chlorophenolics	Metals, Total or Dissolved	Cyanide	(circle) pH, Cond., Cl, SO ₄ , PO ₄ , F, NO ₂ , NO ₃ , BOD, TSS, TDS, Turb.	(circle) NH ₃ -N, COD, TKN, TOC, DOC, NO ₂ +NO ₃ , T-Phos	TOX 9020	Alkalinity	Dioxins/Furans	Dissolved Gases	PAH 8270	REMARKS
PAC-S1	7/22	1130		Soil	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PAC-S2	7/22	1130		Soil Rock	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

REPORT REQUIREMENTS

- I. Routine Report: Method Blank, Surrogate, as required
- II. Report Dup., MS, MSD as required
- III. CLP Like Summary (no raw data)
- IV. Data Validation Report
- V. EDD

INVOICE INFORMATION

P.O. # _____
 Bill To: _____

TURNAROUND REQUIREMENTS

- 24 hr. 48 hr.
- 5 day
- Standard (15 working days)
- Provide FAX Results

Requested Report Date _____

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WA WT NORTHWEST OTHER: WT (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:

Kellogg 7/22 11:44
 Signature Date/Time
Kelly Kellogg AEC
 Printed Name Firm

RECEIVED BY:

M. Mulligan 7/22 1144
 Signature Date/Time
M. Mulligan ALS
 Printed Name Firm

RELINQUISHED BY:

Wrough 7/28/22
 Signature Date/Time
Wrough ALS
 Printed Name Firm

RECEIVED BY:

Wrough 8/1/22 1205
 Signature Date/Time
Wrough ALS - Tucson
 Printed Name Firm

Received: Shawn Pokam ALS 8/4/22 11:15 Everett

Relinquished by: Wrough 8/2/22

Attachment E-15

Quarry Spall, Fremont Analytical, Inc., Work Order No. 2208185

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



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

Anderson Environmental Contracting
Kelly Kellogg
705 Colorado St.
Kelso, WA 98626

RE: Shannon Wilson PACCAR
Work Order Number: 2208185

August 16, 2022

Attention Kelly Kellogg:

Fremont Analytical, Inc. received 1 sample(s) on 8/12/2022 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

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original



CLIENT: Anderson Environmental Contracting
Project: Shannon Wilson PACCAR
Work Order: 2208185

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2208185-001	Quarry Spalls	08/11/2022 11:00 AM	08/12/2022 12:22 PM

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

CLIENT: Anderson Environmental Contracting
Project: Shannon Wilson PACCAR

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



Client: Anderson Environmental Contracting

Collection Date: 8/11/2022 11:00:00 AM

Project: Shannon Wilson PACCAR

Lab ID: 2208185-001

Matrix: Rock/Gravel

Client Sample ID: Quarry Spalls

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 37436

Analyst: OK

Benz(a)anthracene	ND	19.9		µg/Kg-dry	1	8/16/2022 10:33:28 AM
Chrysene	ND	39.8		µg/Kg-dry	1	8/16/2022 10:33:28 AM
Benzo(b)fluoranthene	ND	19.9		µg/Kg-dry	1	8/16/2022 10:33:28 AM
Benzo(k)fluoranthene	ND	19.9		µg/Kg-dry	1	8/16/2022 10:33:28 AM
Benzo(a)pyrene	ND	19.9		µg/Kg-dry	1	8/16/2022 10:33:28 AM
Indeno(1,2,3-cd)pyrene	ND	39.8		µg/Kg-dry	1	8/16/2022 10:33:28 AM
Dibenz(a,h)anthracene	ND	39.8		µg/Kg-dry	1	8/16/2022 10:33:28 AM
Surr: 2-Fluorobiphenyl	93.1	34.4 - 132		%Rec	1	8/16/2022 10:33:28 AM
Surr: Terphenyl-d14 (surr)	99.0	32.8 - 147		%Rec	1	8/16/2022 10:33:28 AM

Total Metals by EPA Method 6020B

Batch ID: 37425

Analyst: EH

Arsenic	11.3	0.0968		mg/Kg-dry	1	8/15/2022 6:01:02 PM
Copper	36.5	0.806		mg/Kg-dry	1	8/15/2022 6:01:02 PM
Lead	2.23	0.161		mg/Kg-dry	1	8/15/2022 6:01:02 PM

Sample Moisture (Percent Moisture)

Batch ID: R77547

Analyst: me

Percent Moisture	1.59	0.500		wt%	1	8/16/2022 9:38:17 AM
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Work Order: 2208185
CLIENT: Anderson Environmental Contracting
Project: Shannon Wilson PACCAR

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: MB-37425	SampType: MBLK	Units: mg/Kg				Prep Date: 8/15/2022	RunNo: 77546				
Client ID: MBLKS	Batch ID: 37425					Analysis Date: 8/15/2022	SeqNo: 1592871				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0916									
Copper	ND	0.763									
Lead	ND	0.153									

Sample ID: LCS-37425	SampType: LCS	Units: mg/Kg				Prep Date: 8/15/2022	RunNo: 77546				
Client ID: LCSS	Batch ID: 37425					Analysis Date: 8/15/2022	SeqNo: 1592872				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	34.5	0.0916	38.17	0	90.3	80	120				
Copper	35.9	0.763	38.17	0	94.0	80	120				
Lead	19.5	0.153	19.08	0	102	80	120				

Sample ID: 2208172-006AMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 8/15/2022	RunNo: 77546				
Client ID: BATCH	Batch ID: 37425					Analysis Date: 8/15/2022	SeqNo: 1592877				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	41.5	0.100	41.67	3.507	91.3	75	125				
Copper	54.0	0.833	41.67	14.94	93.6	75	125				
Lead	21.5	0.167	20.83	1.937	93.9	75	125				

Sample ID: 2208172-006AMSD	SampType: MSD	Units: mg/Kg-dry				Prep Date: 8/15/2022	RunNo: 77546				
Client ID: BATCH	Batch ID: 37425					Analysis Date: 8/15/2022	SeqNo: 1592878				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	43.3	0.103	43.00	3.507	92.5	75	125	41.55	4.05	20	
Copper	54.8	0.860	43.00	14.94	92.7	75	125	53.95	1.59	20	
Lead	21.6	0.172	21.50	1.937	91.3	75	125	21.51	0.301	20	

Work Order: 2208185
 CLIENT: Anderson Environmental Contracting
 Project: Shannon Wilson PACCAR

QC SUMMARY REPORT
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: MB-37436	SampType: MBLK	Units: µg/Kg	Prep Date: 8/15/2022	RunNo: 77557							
Client ID: MBLKS	Batch ID: 37436		Analysis Date: 8/16/2022	SeqNo: 1593110							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	20.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	20.0									
Benzo(k)fluoranthene	ND	20.0									
Benzo(a)pyrene	ND	20.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Surr: 2-Fluorobiphenyl	1,140		1,000		114	34.4	132				
Surr: Terphenyl-d14 (surr)	1,170		1,000		117	32.8	147				

Sample ID: LCS-37436	SampType: LCS	Units: µg/Kg	Prep Date: 8/15/2022	RunNo: 77557							
Client ID: LCSS	Batch ID: 37436		Analysis Date: 8/16/2022	SeqNo: 1593111							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1,970	20.0	2,000	0	98.6	61.5	123				
Chrysene	1,900	40.0	2,000	0	95.2	58.6	120				
Benzo(b)fluoranthene	2,090	20.0	2,000	0	104	62.1	124				
Benzo(k)fluoranthene	2,000	20.0	2,000	0	100	60.3	116				
Benzo(a)pyrene	1,960	20.0	2,000	0	97.8	51.6	115				
Indeno(1,2,3-cd)pyrene	2,050	40.0	2,000	0	103	53.8	127				
Dibenz(a,h)anthracene	1,960	40.0	2,000	0	97.9	53.3	127				
Surr: 2-Fluorobiphenyl	1,030		1,000		103	34.4	132				
Surr: Terphenyl-d14 (surr)	1,090		1,000		109	32.8	147				

Sample ID: 2208158-006AMS	SampType: MS	Units: µg/Kg-dry	Prep Date: 8/15/2022	RunNo: 77557							
Client ID: BATCH	Batch ID: 37436		Analysis Date: 8/16/2022	SeqNo: 1593114							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1,670	20.2	2,016	6.335	82.7	53.4	112				
Chrysene	1,640	40.3	2,016	0	81.2	52	105				
Benzo(b)fluoranthene	1,840	20.2	2,016	3.642	91.0	51.3	119				

Work Order: 2208185
CLIENT: Anderson Environmental Contracting
Project: Shannon Wilson PACCAR

QC SUMMARY REPORT
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: 2208158-006AMS		SampType: MS		Units: µg/Kg-dry		Prep Date: 8/15/2022		RunNo: 77557			
Client ID: BATCH		Batch ID: 37436				Analysis Date: 8/16/2022		SeqNo: 1593114			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	1,690	20.2	2,016	0	83.9	50.3	108				
Benzo(a)pyrene	1,680	20.2	2,016	2.944	83.4	48.5	106				
Indeno(1,2,3-cd)pyrene	1,780	40.3	2,016	0	88.6	42.1	113				
Dibenz(a,h)anthracene	1,700	40.3	2,016	0	84.3	40.4	114				
Surr: 2-Fluorobiphenyl	909		1,008		90.2	34.4	132				
Surr: Terphenyl-d14 (surr)	939		1,008		93.2	32.8	147				

Sample ID: 2208158-006AMSD		SampType: MSD		Units: µg/Kg-dry		Prep Date: 8/15/2022		RunNo: 77557			
Client ID: BATCH		Batch ID: 37436				Analysis Date: 8/16/2022		SeqNo: 1593115			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1,850	20.1	2,014	6.335	91.7	53.4	112	1,672	10.3	30	
Chrysene	1,800	40.3	2,014	0	89.6	52	105	1,636	9.73	30	
Benzo(b)fluoranthene	2,020	20.1	2,014	3.642	100	51.3	119	1,837	9.40	30	
Benzo(k)fluoranthene	1,850	20.1	2,014	0	91.7	50.3	108	1,692	8.70	30	
Benzo(a)pyrene	1,840	20.1	2,014	2.944	91.4	48.5	106	1,684	8.98	30	
Indeno(1,2,3-cd)pyrene	1,940	40.3	2,014	0	96.5	42.1	113	1,785	8.51	30	
Dibenz(a,h)anthracene	1,860	40.3	2,014	0	92.4	40.4	114	1,698	9.17	30	
Surr: 2-Fluorobiphenyl	966		1,007		96.0	34.4	132		0		
Surr: Terphenyl-d14 (surr)	1,020		1,007		101	32.8	147		0		

Client Name: AEC	Work Order Number: 2208185
Logged by: Elisabeth Samoray	Date Received: 8/12/2022 12:22:00 PM

Chain of Custody

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

Log In

3. Coolers are present? Yes No NA
No cooler present
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
Unknown prior to receipt
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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	21.8

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



3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: August 11, 2022 Page: 1 of 1
Project Name: Shannon Wilson PACCAR
Project No: 21-0045
Laboratory Project No (Internal): **2208185**

Client: Anderson Environmental Contracting LLC

Address: 705 Colorado Street

City, State, zip: Kelso, WA 98626

Telephone: 360-577-9194

Fax: 360-577-9198

Collected by: Quarry Representative

Location: Iron Mountain Quarry

Report To (PM): Kelly Kellogg

PM Email: kellyk@aeclic.net (and) karik@aeclic.net

Sample Disposal: Return to client Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	<input type="checkbox"/> VOCs (EPA 8260 / 624) <input type="checkbox"/> BTEX <input type="checkbox"/> Gasoline Range Organics (GX) <input type="checkbox"/> Hydrocarbon Identification (HCID) <input type="checkbox"/> Diesel/Heavy Oil Range Organics (DX) <input type="checkbox"/> SVOCs (EPA 8270 / 625) <input type="checkbox"/> PAHs (EPA 8270 / 625) <input type="checkbox"/> PCBs (EPA 8082 / 608) <input type="checkbox"/> Metals** (EPA 6020 / 200.8) <input type="checkbox"/> Total (T) Dissolved (D) <input type="checkbox"/> Anions (U)*** <input type="checkbox"/> EDB (8011) <input type="checkbox"/> CPAHs via 8270-SM	Comments
1 Quarry Spalls	8/11/22	11am	Soil	1	<input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> Metals** <input checked="" type="checkbox"/> Anions (U)	
2						
3						
4						
5						
6						
7						
8						
9						
10						

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water
 **Metals (Circle): MTCA 5 PFRAs 8 Priority Pollutants 1AL Individual Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn
 ***Anions (Circle): Nitrate Nitrite Nitrate+Nitrite Chloride Sulfate Bromide D-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature) Kari Kaiser Digitally signed by Kari Kaiser Date: 2022.08.12 12:33:53 -07'00'
 Relinquished (Signature) Yuyu Chen Digitally signed by Yuyu Chen Date: 2022.08.12 12:33:53 -07'00'

Turn-around Time:
 Standard Next Day
 2 Day Same Day



3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Client: Anderson Environmental Contracting LLC

Address: 705 Colorado Street

City, State, zip: Kelso, WA 98626

Telephone: 360-577-9194

Fax: 360-577-9198

Date: August 11, 2022

Project Name: Shannon Wilson PACCAR

Project No: 21-0045

Collected by: Quarry Representative

Location: Iron Mountain Quarry

Report To (PM): Kelly Kellogg

PM Email: kellyk@aeclic.net (and) karik@aeclic.net

Laboratory Project No (Internal): **2208185**

Special Remarks: Updated by ES 8/12/22

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	<input type="checkbox"/> VOCs (EPA 8260 / 624) <input type="checkbox"/> BTEX <input type="checkbox"/> Gasoline Range Organics (GK) <input type="checkbox"/> Hydrocarbon Identification (HCID) <input type="checkbox"/> Diesel/Heavy Oil Range Organics (DHO) <input type="checkbox"/> SVOCs (EPA 8270 / 625) <input type="checkbox"/> PAHs (EPA 8270 - SIM) <input type="checkbox"/> PCBs (EPA 8082 / 608) <input type="checkbox"/> Metals ** (EPA 6020 / 200.8) <input type="checkbox"/> Total (T) Dissolved (D) <input type="checkbox"/> Anions (U)*** <input type="checkbox"/> EDB (8011) <input type="checkbox"/> CPAHS VIA 8270-SIM	Comments
1 Quarry Spalls	8/11/22	11am	Soil	1	<input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> BTEX <input checked="" type="checkbox"/> Gasoline Range Organics (GK) <input checked="" type="checkbox"/> Hydrocarbon Identification (HCID) <input checked="" type="checkbox"/> Diesel/Heavy Oil Range Organics (DHO) <input checked="" type="checkbox"/> SVOCs (EPA 8270 - SIM) <input checked="" type="checkbox"/> PAHs (EPA 8270 - SIM) <input checked="" type="checkbox"/> PCBs (EPA 8082 / 608) <input checked="" type="checkbox"/> Metals ** (EPA 6020 / 200.8) <input checked="" type="checkbox"/> Total (T) Dissolved (D) <input checked="" type="checkbox"/> Anions (U)*** <input checked="" type="checkbox"/> EDB (8011) <input checked="" type="checkbox"/> CPAHS VIA 8270-SIM	
2						
3						
4						
5						
6						
7						
8						
9						
10						

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water
 **Metals (Circle): MTCA 5, PCRA-8, Priority Pollutants, IRL, Individual Ag Al As B Ba Be Ca Cd Cr Cu Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn
 ***Anions (Circle): Nitrate, Nitrite, Chloride, Sulfate, Bromide, Iodide, Phosphate, Fluoride, Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature) **Kari Kaiser** Digitally signed by Kari Kaiser Date: 2022.08.12 12:33:53 -07'00'
 Relinquished (Signature) **Yuyu Chen** Digitally signed by Yuyu Chen Date: 2022.08.12 12:33:53 -07'00'

Print Name **Yuyu Chen** Date/Time **8/12/22 8:01**
 Date/Time **8/12/22 8:01**



3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Client: Anderson Environmental Contracting LLC

Address: 705 Colorado Street

City, State, zip: Kelso, WA 98626

Telephone: 360-577-9194

Fax: 360-577-9198

Date: August 11, 2022

Project Name: Shannon Wilson PACCAR

Project No: 21-0045

Collected by: Quarry Representative

Location: Iron Mountain Quarry

Report To (PM): Kelly Kellogg

PM Email: kellyk@aeclic.net (and) karik@aeclic.net

Laboratory Project No (Internal): **2208185**

Special Remarks: Updated by ES 8/12/22

ASAP TAT 8/15/22 per KK-gac

Sample Disposal: Return to client Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GK)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DO)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Ametals (U)***	EDB (8011)	CPAHs (VIA 8270-SM)	Comments
1 Quarry Spalls	8/11/22	11am	Soil	1														
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water
 **Metals (Circle): MTCA 5 PFRRA-8 Priority Pollutants IRL Individual Ag Al As B Ba Be Ca Cd Cr Cu Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn
 ***Anions (Circle): Nitrate Nitrite Nitrate Nitrite Sulfate Bromide Chloride Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature) **Kari Kaiser** Digitally signed by Kari Kaiser Date: 2022.08.12 12:33:53 -07:00
 Relinquished (Signature) **Yuyi Chen** Digitally signed by Yuyi Chen Date: 2022.08.12 12:22:22 -07:00
 Received (Signature) **Yuyi Chen** Digitally signed by Yuyi Chen Date: 2022.08.12 12:22:22 -07:00
 Turn-around Time: Standard Next Day Same Day 2 Day ASAP (weekly)

Attachment E-16

Crushed Rock, Gradation Results, Iron Mountain Quarry

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION

2.5" minus crushed ledge rock

Date Sampled: **9/22/2021**

Time sampled: **9:00**

Date tested: **9/22/2021**

Technician: **Lee**

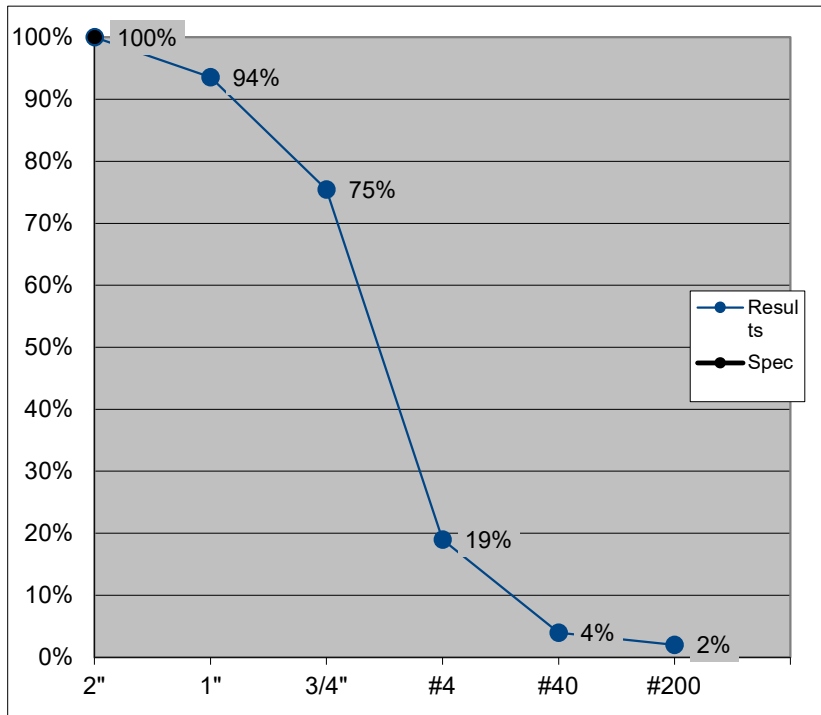
Sample- Dry/Wet: **Dry**

WSDOT Pit # D334

Material type: 2.5" minus



Sample Weight (g)	10 minute sieve time			
	Sieve Size	Cum. Wt (g)	% retained	% passed
7708	2"	0	0.0%	100%
	1"	497	6.4%	94%
NOTES	3/4"	1892	24.5%	75%
	#4	6211	80.6%	19%
	#40	7401	96.0%	4%
	#200	7554	98.0%	2%



Attachment E-17

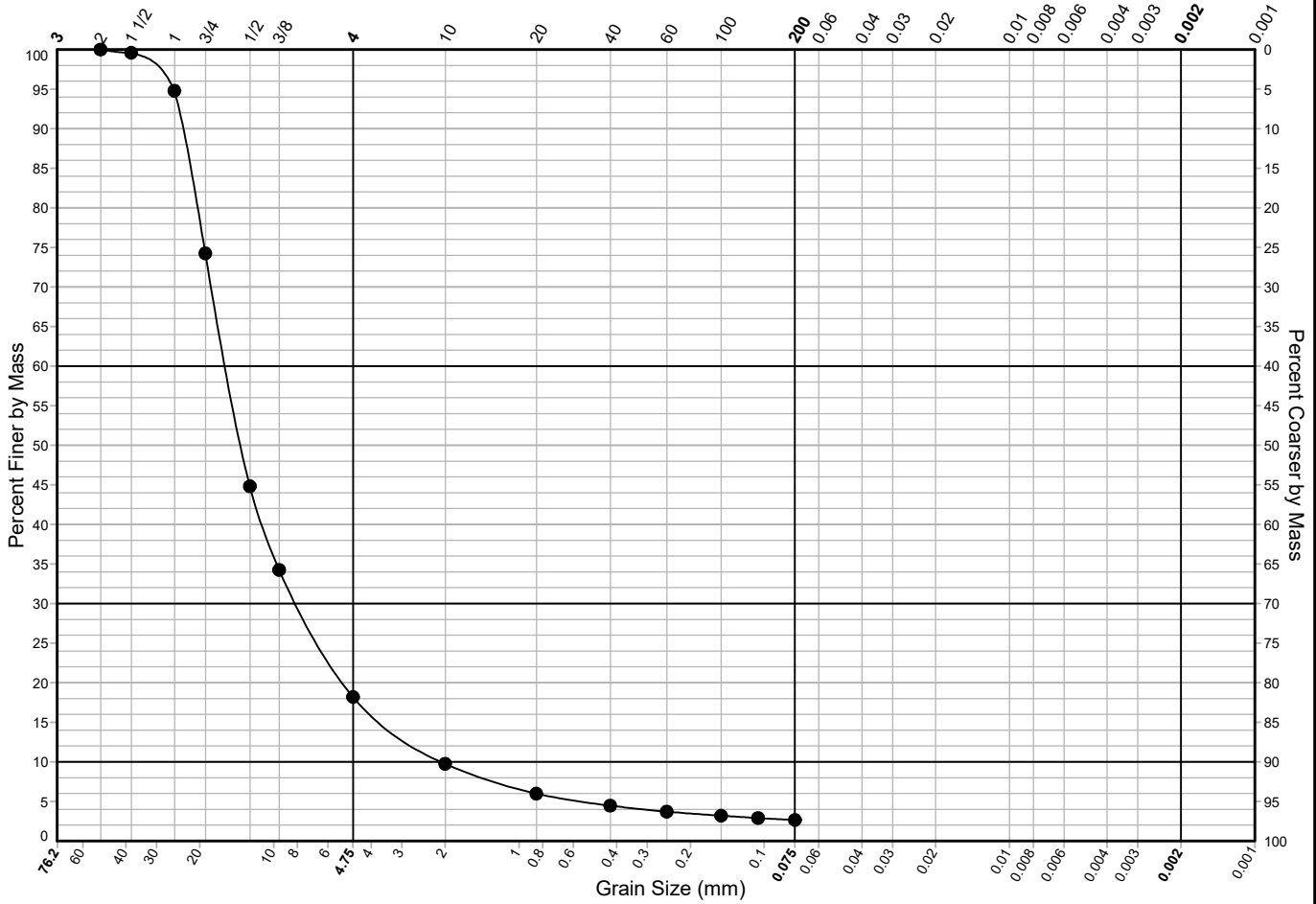
Crushed Rock, Gradation Results, Shannon & Wilson, Project No. 103485-001

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION

8801 East Marginal Way
 Pilot Injection
 Seattle, Washington

Iron Mountain Excavations|0

Gravel		Sand			Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt & Clay-Size	
Mesh Opening in Inches		Mesh Openings per Inch, U.S. Standard			Grain Size in Millimeters	



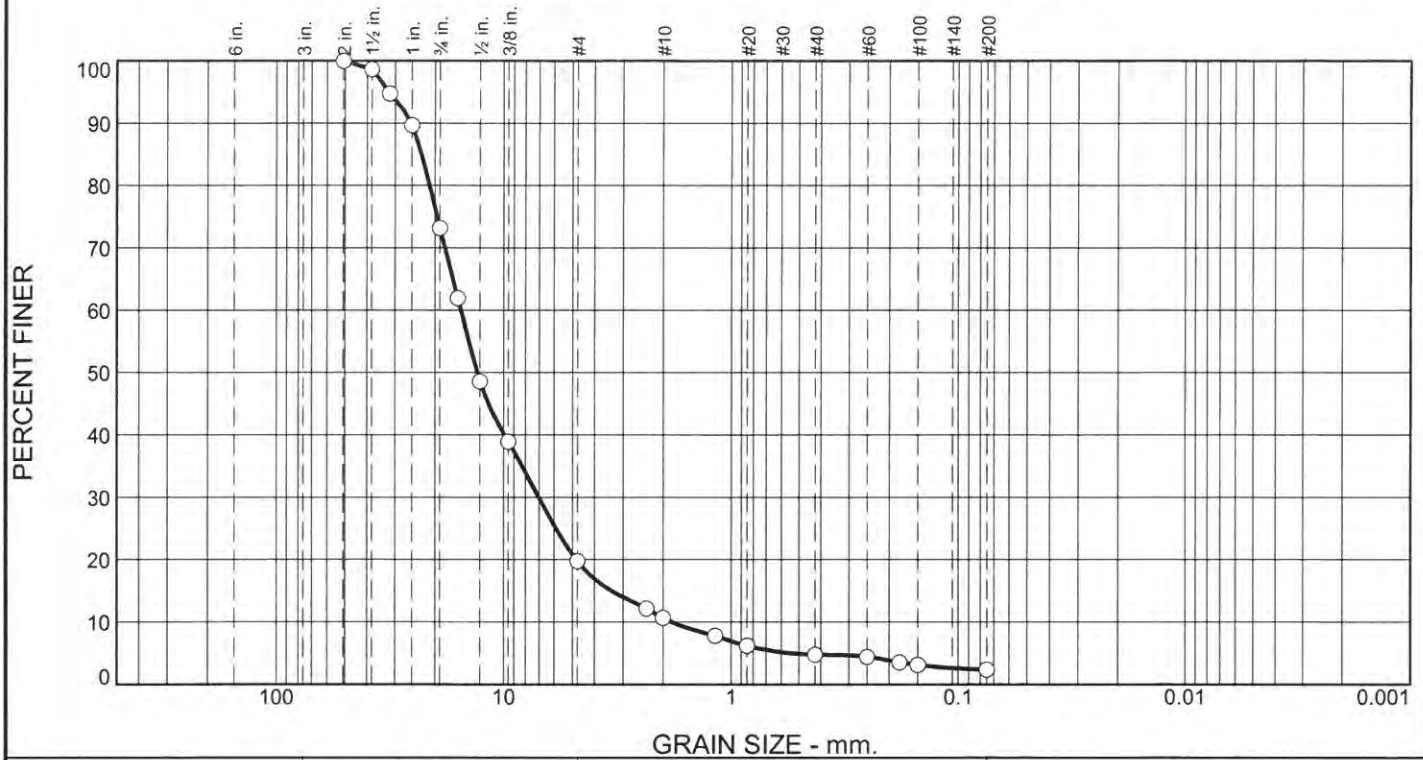
Sample Identification	Depth (ft)	USCS Group Symbol	USCS Group Name	Gravel %	Sand %	Fines %	< 20µm %	< 2µm %	WC %	Tested By	Review By	ASTM Std.
● Iron Mountain Excavations, 3-2.5-inch minus	0.0	GW	Well-Graded Gravel with Sand	82	16	2.7			3.6	SJD	MXM	D6913

Attachment E-18

Crushed Rock, Gradation and Proctor Results, Krazan & Associates, Inc., Sample No. 21L827

APPENDIX E: IMPORTED FILL, SELECTION, PLACEMENT, AND COMPACTION

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	27	53	9	6	3	2	

Test Results (C-136 & C-117)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
2	100		
1.5	99		
1.25	95		
1	90		
.75	73		
.625	62		
.5	49		
.375	39		
#4	20		
#8	12		
#10	11		
#16	8		
#20	6		
#40	5		
#60	4		
#80	4		
#100	3		
#200	2.3		

* (no specification provided)

Material Description

2 1/2" Minus Crushed.
 Sampled from onsite stockpile.
 Sampled by F.Muhammad.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= GW AASHTO (M 145)= A-1-a

Coefficients

D₉₀= 25.6378 D₈₅= 23.0093 D₆₀= 15.3930
 D₅₀= 13.0585 D₃₀= 7.0263 D₁₅= 3.3563
 D₁₀= 1.8277 C_u= 8.42 C_c= 1.75

Remarks

Sample ID: 21L827
 Sample Date: 11-8-21

Date Received: 11-8-21 Date Tested: 11-8-21
 Tested By: I.Teriong
 Checked By: M.Thomas *[Signature]*
 Title: Material Laboratory Manager

Sample Number: 21L827

Date Sampled: 11-8-21

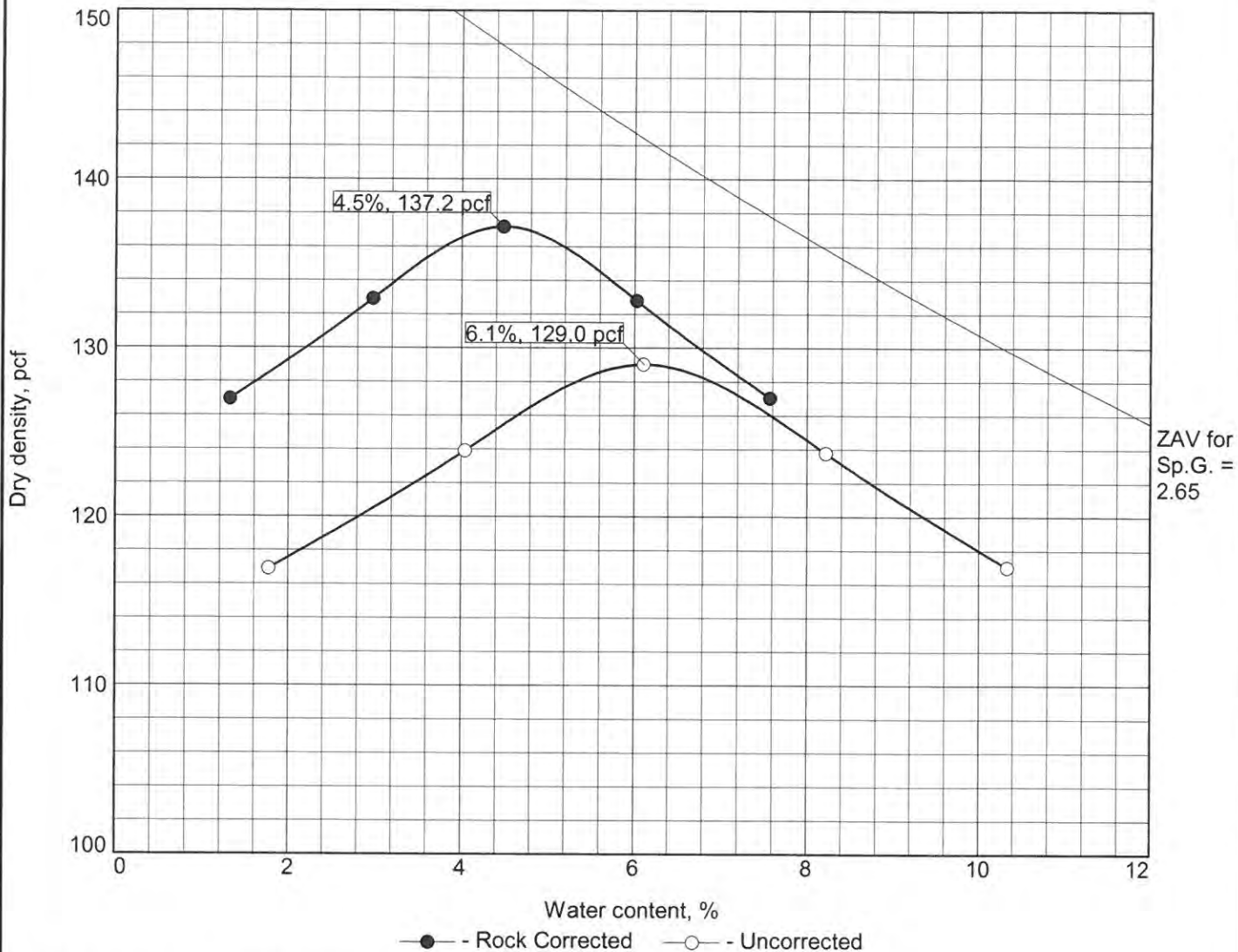


Client: Anderson Environmental Contracting, LLC
 Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila

Project No: 066-21314

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 1557 Method C Modified
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	GW	A-1-a	-	2.65	NV	NP	27	2.3

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 137.2 pcf	129.0 pcf	2 1/2" Minus Crushed. Sampled from onsite stockpile. Sampled by F.Muhammad.
Optimum moisture = 4.5 %	6.1 %	

Project No. 066-21314 Client: Anderson Environmental Contracting, LLC Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila ○ Sample Number: 21L827	Remarks: Sample ID: 21L827 Sample Date: 11-8-21
--	--



Figure

Tested By: I.teriong

Checked By: M.Thomas *[Signature]*

Attachment E-19

Mirafi® 140N, Product Data Sheet, Tencate Geosynthetics

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION

Mirafi® 140N



Mirafi® 140N is a nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. Mirafi® 140N is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids. Mirafi® 140N meets AASHTO M288-15 Class 3 for Elongation > 50%.

TenCate Geosynthetics Americas Laboratories are accredited by Geosynthetic Accreditation Institute – Laboratory Accreditation Program ([GAI-LAP](#)). [NTPEP Listed](#)

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	120 (534)	120 (534)
Grab Tensile Elongation	ASTM D4632	%	50	50
Trapezoid Tear Strength	ASTM D4533	lbs (N)	50 (223)	50 (223)
CBR Puncture Strength	ASTM D6241	lbs (N)	310 (1380)	
			Maximum Opening Size	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	70 (0.212)	
			Minimum Roll Value	
Permittivity	ASTM D4491	sec ⁻¹	1.7	
Flow Rate	ASTM D4491	gal/min/ft ² (l/min/m ²)	135 (5500)	
			Minimum Test Value	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70	

Physical Properties	Unit	Roll Sizes	
Roll Dimensions (width x length)	ft (m)	12.5 x 360 (3.8 x 110)	15 x 360 (4.5 x 110)
Roll Area	yd ² (m ²)	500 (418)	600 (502)

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Pendergrass, GA 30567

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Tel 888 795 0808

Fax 706 693 4400
www.tencate.com



FGS000385
ETOR77

Attachment E-20

Compaction Reports, Krazan & Associates, Inc.

APPENDIX E: IMPORTED FILL; SELECTION, PLACEMENT, AND COMPACTION



Field

Report NO.: 06621314DFR1072021MM

DATE: 10/7/2021	Set Count:	CONTRACTOR: Anderson Environmental
PROJECT #: 06621314		PERMIT #: N/A
PROJECT: Shannon and Wilson PACCAR		INSPECTOR: Marty Mundy
LOCATION: 8801 East Marginal Way South		JURISDICTION: Tukwila
KA P.M.: Bill Throne	WEATHER: Cloudy	TEMP: 50° F

On site for soil compaction testing.

Soil compaction test was taken, with a Troxler nuclear densometer, on the first lift of the backfill material placed for Pit 1. A sample of the material was obtained for proctor evaluation and sieve analysis. See report 6621314SCR1072021MM for compaction test result. The compaction test result is currently pending the results of the proctor evaluation.

Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		
					

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DATE: 10/7/2021
 PROJECT #: 06621314
 PROJECT: Shannon and Wilson PACCAR
 LOCATION: 8801 East Marginal Way South
 KA P.M.: Bill Throne

CONTRACTOR: Anderson Environmental
 PERMIT #: N/A
 INSPECTOR: Marty Mundy
 JURISDICTION: Tukwila
 WEATHER: Cloudy TEMP: 50

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other :

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Pit Run - 21L779	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	1st Lift	Pit 1	1	8	125.7	5.1%	92%	92%

EQUIPMENT NO.: 21303
 DAILY AVERAGE STANDARD DENSITY COUNT: 1793
 DAILY AVERAGE STANDARD MOISTURE COUNT: 644

Reviewed By: 

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS :

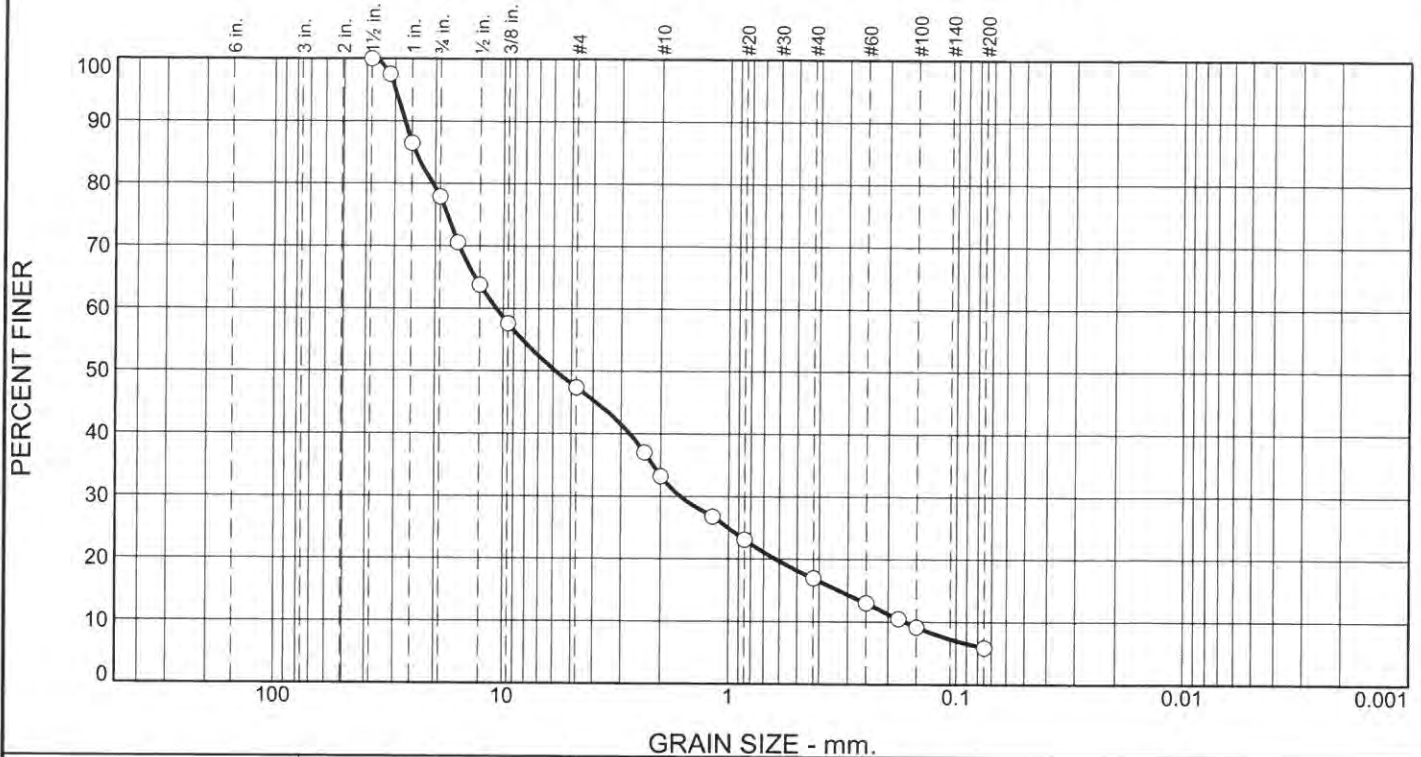
Superintendent/Representative:

Technician:



Offices Serving the Western United States

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	22	31	14	16	11	6	

Test Results (C-136 & C-117)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100		
1.25	98		
1	86		
.75	78		
.625	71		
.5	64		
.375	58		
#4	47		
#8	37		
#10	33		
#16	27		
#20	23		
#40	17		
#60	13		
#80	11		
#100	9		
#200	5.9		

* (no specification provided)

Material Description

Pit Run.
 Sampled from onsite stockpile.
 Sampled by M.Mundy.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= GW-GM AASHTO (M 145)= A-1-a

Coefficients

D ₉₀ = 27.2340	D ₈₅ = 24.4963	D ₆₀ = 10.7463
D ₅₀ = 5.8593	D ₃₀ = 1.6338	D ₁₅ = 0.3264
D ₁₀ = 0.1681	C _u = 63.94	C _c = 1.48

Remarks

Sample ID: 21L769
 Sample Date: 10-7-21

Date Received: 10-8-21 **Date Tested:** 10-8-21

Tested By: I.Teriong

Checked By: M.Thomas *[Signature]*

Title: Material Laboratory Manager

Source of Sample: Washington Rock Quarries King Creek Pit
Sample Number: 21L769

Date Sampled: 10-7-21

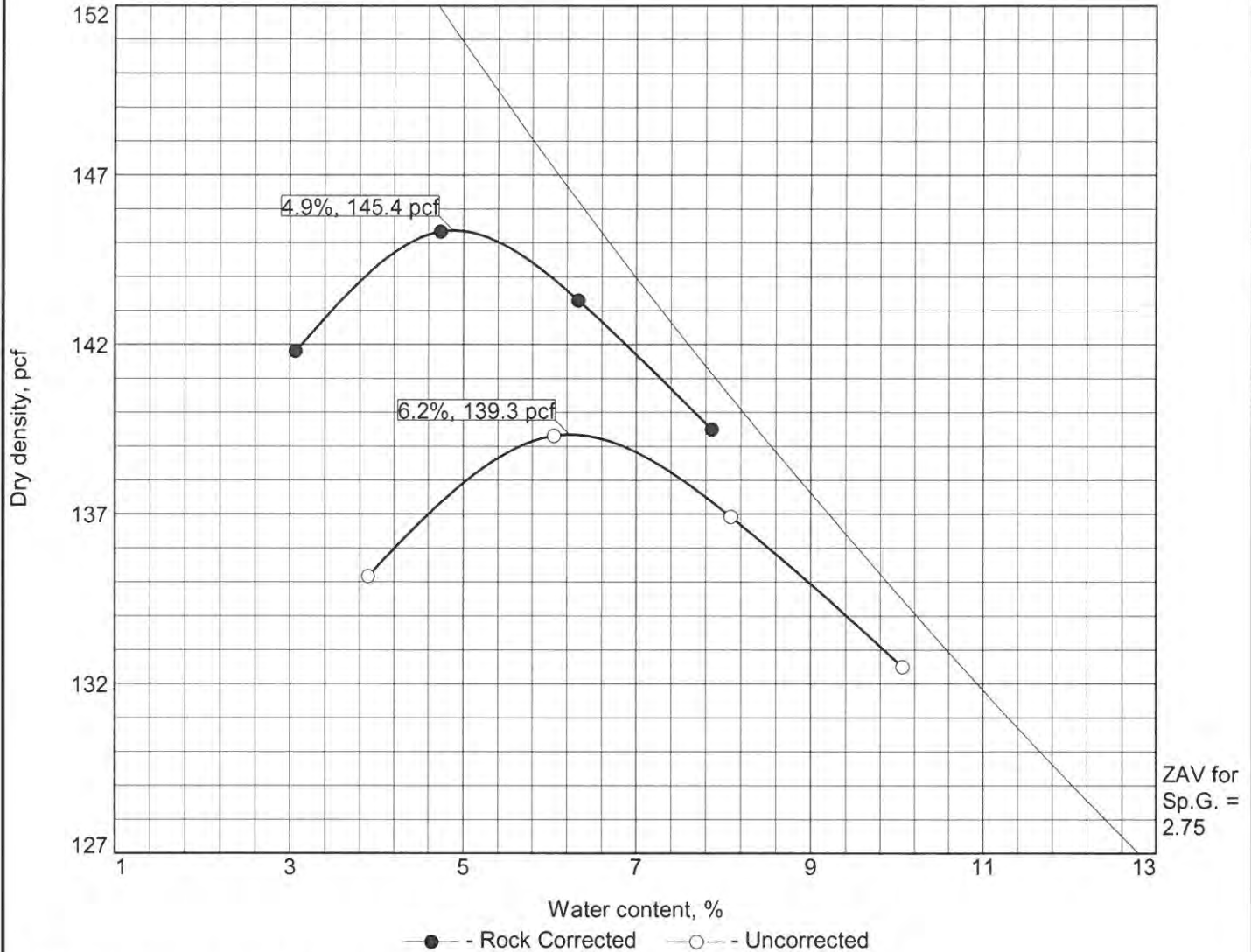


Client: Anderson Environmental Contracting, LLC
Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila

Project No: 066-21314

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 1557 Method C Modified
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	GW-GM	A-1-a	-	2.75	NV	NP	22	5.9

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 145.4 pcf	139.3 pcf	Pit Run. Sampled from onsite stockpile. Sampled by M.Mundy.
Optimum moisture = 4.9 %	6.2 %	

Project No. 066-21314 Client: Anderson Environmental Contracting, LLC Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila Source: Washington Rock Quarries King Creek Pit Sample No.: 21L769	Remarks: Sample ID:21L769 Sample Date:10-7-21
--	--



Figure

Tested By: I.Teriong

Checked By: M.Thomas *[Signature]*





Field
Report NO.: 06621314DFR1082021SM

DATE: 10/8/2021	Set Count:	CONTRACTOR:
PROJECT #: 06621314		PERMIT #: <i>Not Available</i>
PROJECT: 21-0045 Shannon Wilson PACCAR Rem		INSPECTOR: Saleh Musapour
LOCATION: 8801 E Marginal Way S		JURISDICTION: City of Tukwila
KA P.M.: WBT	WEATHER: Partly Sunny	TEMP: 63° F

A representative of Krazan and Associates, Inc. arrived on site per request for Soil Compaction Test. The project was backfilling of paved area.

As I tried many times to get a compaction result but to technical issue of the gauge I couldn't get a result of compaction and contractor said we are done for today and we want to reschedule this test for next day.

Reviewed By: 	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.		
Superintendent/Representative:	Technician:	
		

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Field

Report NO.: 06621314DFR10112021MM

DATE: 10/11/2021	Set Count:	CONTRACTOR: Anderson Environmental
PROJECT #: 06621314		PERMIT #: N/A
PROJECT: Shannon and Wilson PACCAR		INSPECTOR: Marty Mundy
LOCATION: 8801 East Marginal Way South		JURISDICTION: Tukwila
KA P.M.: Bill Throne		WEATHER: Partly Cloudy TEMP: 52° F

On site for soil compaction testing.

Soil compaction tests were taken, with a Troxler nuclear densometer, on the backfill material placed in Pit 1. The material was placed in 8" lifts and compacted with a vibratory roller. See report 6621314SCR10112021MM-1 for compaction test results. Obtained a sample of the backfill material from the compacted material for a proctor evaluation. The compaction test results are currently pending the results of the proctor evaluation.

Reviewed By: 	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.		
Superintendent/Representative:	Technician:	
		

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DATE: 10/11/2021
 PROJECT #: 06621314
 PROJECT: Shannon and Wilson PACCAR
 LOCATION: 8801 East Marginal Way South
 KA P.M.: Bill Throne

CONTRACTOR: Anderson Environmental
 PERMIT #: N/A
 INSPECTOR: Marty Mundy
 JURISDICTION: Tukwila
 WEATHER: Cloudy TEMP: 46

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas : _____
- Building Pad(s) : _____
- Utility : _____
- Other : _____

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Pit Run	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	1st Lift	Pit 1	1	8	125.9	7.1%	92%	92%
2	2nd Lift	Pit 1	1	8	130.7	7.4%	95%	95%
3	3rd Lift	Pit 1	1	8	132.0	6.4%	96%	95%
4	4th Lift	Pit 1	1	8	129.6	5.8%	95%	95%

EQUIPMENT NO.: 21303
 DAILY AVERAGE STANDARD DENSITY COUNT: 1787
 DAILY AVERAGE STANDARD MOISTURE COUNT: 648

Reviewed By: 

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS :

Superintendent/Representative:

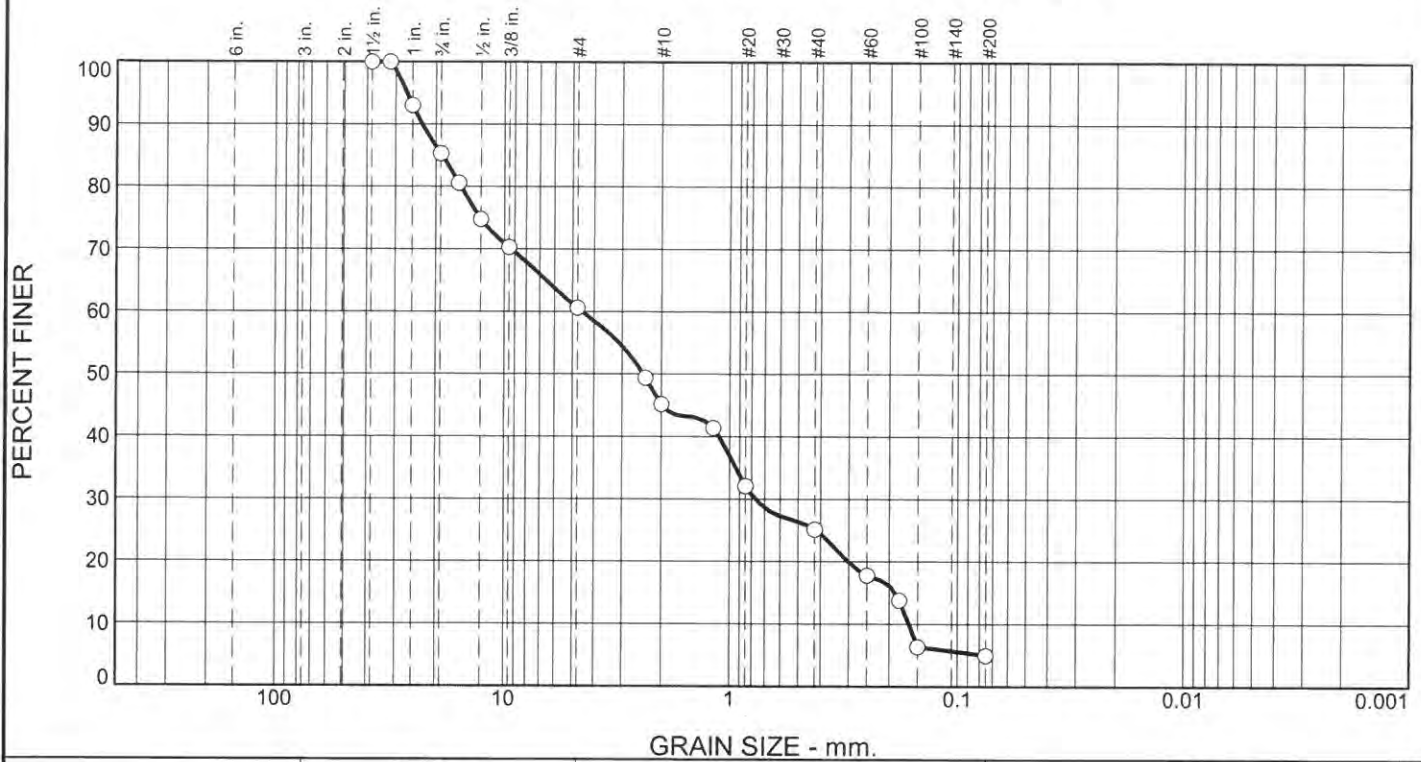
Technician:



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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	15	24	16	20	20	5	

Test Results (C-136 & C-117)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100		
1.25	100		
1	93		
.75	85		
.625	81		
.5	75		
.375	70		
#4	61		
#8	49		
#10	45		
#16	41		
#20	32		
#40	25		
#60	18		
#80	14		
#100	6		
#200	5.0		

* (no specification provided)

Material Description

Pit Run.
Sampled from compacted fill placed onsite.
Sampled by M.Mundy.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-1-a

Coefficients

D₉₀= 23.0339 D₈₅= 18.8318 D₆₀= 4.5293
D₅₀= 2.4150 D₃₀= 0.7697 D₁₅= 0.1877
D₁₀= 0.1635 C_u= 27.70 C_c= 0.80

Remarks

Sample ID: 21L779
Sample Date: 10-11-21

Date Received: 10-11-21 **Date Tested:** 10-12-21
Tested By: I.Teriong
Checked By: M.Thomas *[Signature]*
Title: Material Laboratory Manager

Source of Sample: Washington Rock Quarries King Creek Pit
Sample Number: 21L779

Date Sampled: 10-11-21

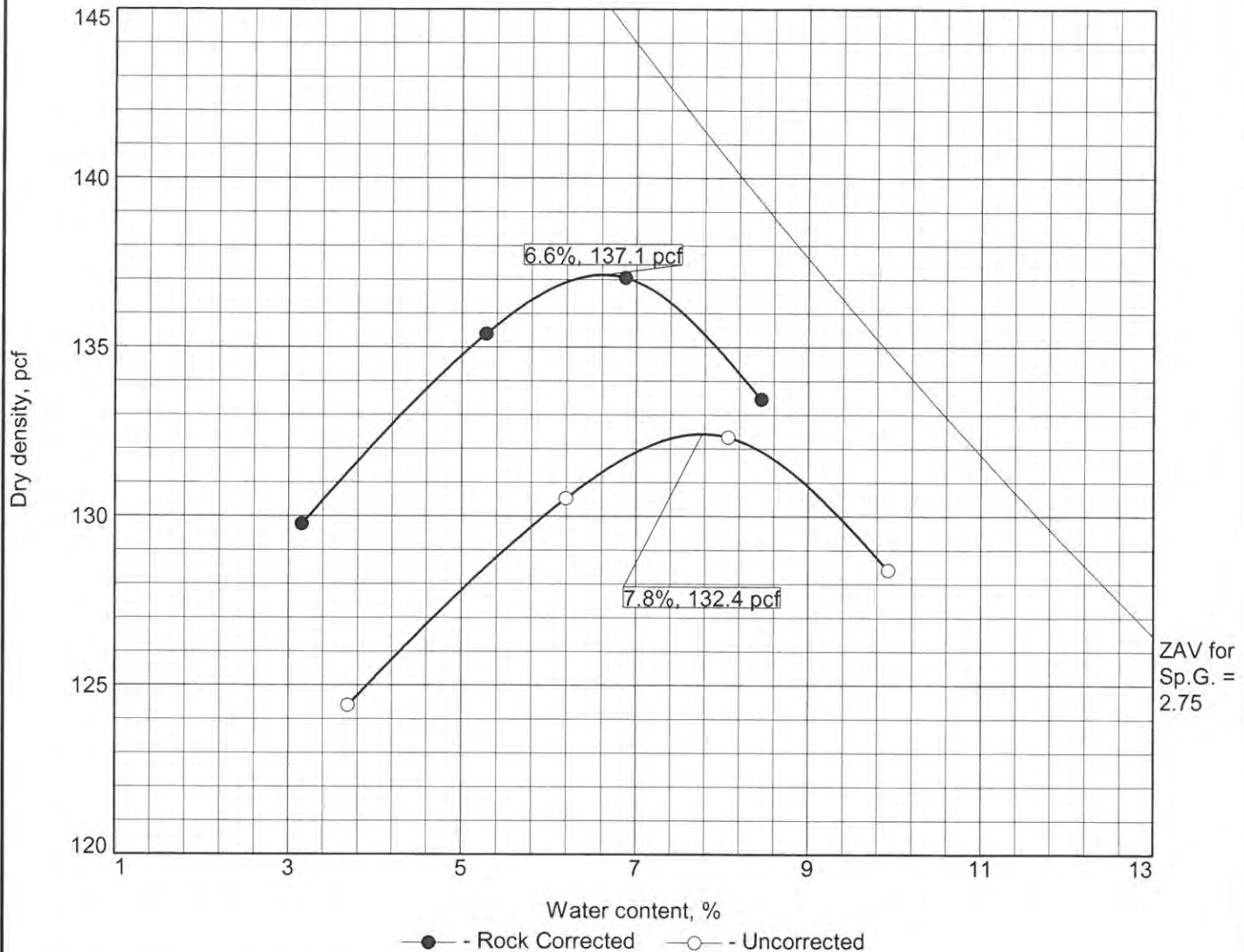


Client: Anderson Environmental Contracting, LLC
Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila

Project No: 066-21314

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 1557 Method C Modified
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	SP-SM	A-1-a	-	2.75	NV	NP	15	5.0

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 137.1 pcf	132.4 pcf	Pit Run. Sampled from compacted fill placed onsite. Sampled by M.Mundy.
Optimum moisture = 6.6 %	7.8 %	

Project No. 066-21314 Client: Anderson Environmental Contracting, LLC Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila ○ Source: Washington Rock Quarries King Creek Pit Sample No.: 21L779	Remarks: Sample ID: 21L779 Sample Date: 10-11-21
--	---



Figure

Tested By: I.Teriong

Checked By: M.Thomas




Field
Report NO.: 06621314DFR10122021PS

DATE: 10/12/2021	Set Count:	CONTRACTOR: S&W / Andersen Environmental
PROJECT #: 06621314		PERMIT #: D20-0241
PROJECT: 21-0045 Shannon Wilson PACCAR Rem		INSPECTOR: Paulo Salvan
LOCATION: 8801 E Marginal Way S		JURISDICTION: City of Tukwila
KA P.M.: Bill Throne	WEATHER: cloudy	TEMP: 42° F

A representative of Krazan and Associates, Inc. arrived onsite to observe the placement of lifts and perform soil compaction tests on backfill in Pit #1.

On arrival, I spoke with foreman onsite and we discussed the scope of work for the soil compaction tests. The soil compaction tests took place on Pit #1. The material used for backfill was Import Gravel Borrow (Pit Run). I observed the contractor place approximately 8" thick loose lifts for lifts #5 and #6. I performed 2 density tests with the Troxler Density Gauge. The density tests indicate the backfill met the minimum required compaction level of 95 percent. Please refer to reports 06621314SCR10122021PS for test results and locations.

Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		
					

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DATE: 10/12/2021
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR Rem Tuk
 LOCATION: 8801 E Marginal Way S
 KA P.M.: Bill Throne

CONTRACTOR: AEC
 PERMIT #: D20-0241
 INSPECTOR: Paulo Salvan
 JURISDICTION: City of Tukwila
 WEATHER: cloudy TEMP: 45

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #1

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Pit Run (Gravel Borrow)	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	Lift #5	Pit #1	1	8"	137.0	5.4%	100%	95%
2	Lift #6	Pit #1	1	10"	134.8	6.7%	98%	95%

EQUIPMENT NO.: 14617
 DAILY AVERAGE STANDARD DENSITY COUNT: 1481
 DAILY AVERAGE STANDARD MOISTURE COUNT: 609

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

Reviewed By: _____

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS:

Superintendent/Representative:

Technician:

Offices Serving the Western United States

Compaction Report

Effective 12/15/2020

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Field
Report NO.: 06621314DFR10142021PS

DATE: 10/14/2021	Set Count:	CONTRACTOR: AEC
PROJECT #: 06621314		PERMIT #: D20-0241
PROJECT: 21-0045 Shannon Wilson PACCAR Rem		INSPECTOR: Paulo Salvan
LOCATION: 8801 E Marginal Way S		JURISDICTION: city of Tukwila
KA P.M.: Bill Throne	WEATHER: cloudy	TEMP: 48° F

A representative of Krazan and Associates, Inc. arrived onsite to perform soil compaction tests.

On arrival, I spoke with the foreman onsite and we discussed the scope of work for the soil compaction tests. The soil compaction tests took place on Pit #1-lift #7 and on Pit #8 for lifts #1-4. The material used for backfill and tested for soil compaction was Pit Run. The contractor placed approximately 8" lifts for the pits. I performed (1) soil compaction tests for each lifts with a Troxler Density Gauge and all tests met and exceeded the minimum requirement of 95% soil compaction tests. Please refer to report 06621314SCR10142021PS for test results.

Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		

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DATE: 10/14/2021
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR Rem Tuk
 LOCATION: 8801 Marginal Way S
 KA P.M.: Bill Throne

CONTRACTOR: AEC
 PERMIT #: D20-0241
 INSPECTOR: Paulo Salvan
 JURISDICTION: City of Tukwila
 WEATHER: cloudy TEMP: 48

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556


OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #1 and Pit #8

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Pit run	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	Lift #7	Pit #1	1	PR&8	131.1	5.7%	96%	
2	Lift #1	Pit #8	1	PR&6	130.5	7.0%	95%	
3	Lifrt #2	Pit #8	1	PR&8	134.1	6.0%	98%	
4	Lift #3	Pit #8	1	PR&8	136.0	6.1%	99%	
5	Lift #4	Pit #8	1	PR&6	135.7	5.8%	99%	

EQUIPMENT NO.: 14617
 DAILY AVERAGE STANDARD DENSITY COUNT: 1485
 DAILY AVERAGE STANDARD MOISTURE COUNT: 604
 Reviewed By: 

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.
 REMARKS :

Superintendent/Representative:

Technician:



Paulo S.

Offices Serving the Western United States

DATE: 10/15/2021	Set Count:	CONTRACTOR: AEC
PROJECT #: 06621314		PERMIT #: D20-0241
PROJECT: 21-0045 Shannon Wilson PACCAR Rem		INSPECTOR: Paulo Salvan
LOCATION: 8801 Marginal Way South		JURISDICTION: city of Tukwila
KA P.M.: Bill Throne	WEATHER: cloudy	TEMP: 54° F

A representative of Krazan and Associates, Inc. arrived onsite to perform soil compaction test.

On arrival, I spoke with the foreman onsite and we discussed the scope of work for soil compaction tests. The soil compaction test took place on Pit #8 for lifts #5 and #6. On arrival, I tested lift #5 with a Troxler Density Gauge, the contractor placed approximately 8" of Pit run. The test met and exceeded the minimum requirement of 95% soil compaction tests. Due to scheduling, I had to leave site to cover a project and return in the afternoon to test the last lift on pit #8. On my return, I tested the last lift, lift #6 with a Troxler Density Gauge, the contractor placed approximately 8" of pit run. The test met and exceeded the minimum requirement of 95% soil compaction test. Please refer to report 06621314SCR10152021PS for test results.

Reviewed By: 	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.		
Superintendent/Representative:	Technician:	
		

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DATE: 10/15/2021
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR Rem Tukwila
 LOCATION: 8801 E Marginal Way South
 KA P.M.: Bill Throne

CONTRACTOR: AEC
 PERMIT #: D20-0241
 INSPECTOR: Paulo Salvan
 JURISDICTION: City of Tukwila
 WEATHER: cloudy TEMP: 54

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #8

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Pit Run	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	Lift 5	Pit #8	1	PR&8	135.9	5.1%	99%	
2	Lift 6	Pit #8	1	PR&8	135.1	5.4%	99%	

EQUIPMENT NO.: 14617
 DAILY AVERAGE STANDARD DENSITY COUNT: 1485
 DAILY AVERAGE STANDARD MOISTURE COUNT: 604
 Reviewed By: *[Signature]*

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.
 REMARKS :

Superintendent/Representative: _____ Technician: *Paulo S.*

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DATE: 10/18/2021
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR Rem Tukw
 LOCATION: 8801 E. Marginal Way S
 KA P.M.: Bill Throne

CONTRACTOR: AEC
 PERMIT #: D20-0241
 INSPECTOR: Paulo Salvan
 JURISDICTION: Tukwila
 WEATHER: cloudy TEMP: 58

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #5

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Gravel Barrow	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	Lift #1	Pit #5	1	PR&6"	135.9	6.5%	99%	95%
2	Lift #2	Pit #5	1	PR&8	136.1	7.2%	99%	95%
3	Lift #2	Pit #5	1	PR&8	135.1	6.5%	99%	95%

EQUIPMENT NO.: 14617
 DAILY AVERAGE STANDARD DENSITY COUNT: 1480
 DAILY AVERAGE STANDARD MOISTURE COUNT: 562
 Reviewed By: 

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.
 REMARKS :

Superintendent/Representative:

Technician:


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Field Report NO.: 06621314DFR10182021PS

DATE: 10/18/2021	Set Count:	CONTRACTOR: AEC
PROJECT #: 06621314		PERMIT #: D-20-0241
PROJECT: 21-0045 Shannon Wilson PACCAR Rem		INSPECTOR: Paulo Salvan
LOCATION: 8801 E. Marginal Way S		JURISDICTION: City of Tukwila
KA P.M.: Bill Throne	WEATHER: cloudy	TEMP: 58° F

A representative of Krazan and Associates, Inc. arrived onsite to perform soil compaction test.

On arrival, I spoke with the foreman onsite and we discussed the scope of work for the soil compaction tests. The soil compaction test took place on Pit #5, the contractor placed approximately (2) 8" lifts of Gravel Barrow. I tested (1) on the 1st lift and (2) on the 2nd lift with the Troxler Density Gauge. All 3 tests met and exceeded the minimum requirement of 95% soil compaction tests. Please refer to report 06621314SCR10182021PS for test results.

Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		
					

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Geotechnical Engineering • Environmental Engineering
Construction Testing and Inspection

Field
Report NO.: 06621314DFR10192021PS

DATE: 10/19/2021	Set Count:	CONTRACTOR: AEC
PROJECT #: 06621314		PERMIT #: D20-0241
PROJECT: 21-0045 Shannon Willson PACCAR Rem		INSPECTOR: Paulo Salvan
LOCATION: 8801 E. Marginal Way S		JURISDICTION: City of Tukwila
KA P.M.: Bill Throne	WEATHER: cloudy	TEMP: 55° F

A representative of Krazan and Associates, Inc. arrived onsite to perform soil compaction.

On arrival, I spoke with the foreman onsite and we discussed the scope of work for the soil compaction tests. The soil compaction test took place on Pit #7 and Pit #5. The contractor placed approximately 8" of Gravel Barrow for the backfill of the pits. I performed (8) soil compaction tests on Pit #8 – 1 test per lift with a Troxler Density Gauge and all 8 tests met and exceeded the minimum requirement of 95% soil compaction. I performed (4) soil compaction tests on Pit #5 – 2 tests on lift #3 and 2 tests on lifts #4 with a Troxler Density Gauge and all 4 tests met and exceeded the minimum requirement of 95% soil compaction tests. Please refer to reports 06621314SCR10192021PS-1 and 06621314SCR10192021PS-2 for test results.

Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		

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DATE: 10/19/2021
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR Rem Tukwila
 LOCATION: 8801 E. Marginal Way S
 KA P.M.: Bill Throne

CONTRACTOR: AEC
 PERMIT #: D20-0241
 INSPECTOR: Paulo Salván
 JURISDICTION: City of Tukwila
 WEATHER: cloudy TEMP: 55

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #8

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Gravel Barrow	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	Lift #1	Pit #7	1	PR&6"	135.9	6.5%	99%	95%
2	Lift #2	Pit #7	1	PR&10	132.9	7.7%	97%	95%
3	Lift #3	Pit #7	1	PR&11	135.1	5.5%	99%	95%
4	Lift #4	Pit #7	1	PR&10	133.3	6.5%	97%	95%
5	Lift #5	Pit #7	1	PR&9	136.0	6.2%	99%	95%
6	Lift #6	Pit #7	1	PR&10	136.1	5.4%	99%	95%
7	Lift #7	Pit #7	1	PR&11	136.3	6.1%	99%	95%
8	Lift #8	Pit #7	1	PR&10	135.8	5.4%	99%	95%

EQUIPMENT NO.: 14617
 DAILY AVERAGE STANDARD DENSITY COUNT: 1494
 DAILY AVERAGE STANDARD MOISTURE COUNT: 6.5

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

Reviewed By: 

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS :

Superintendent/Representative:

Technician:

Paulo S.

Offices Serving the Western United States

Compaction Report

Effective 12-15-2020

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DATE: 10/19/2021
 PROJECT #: 06621314
 PROJECT: 21-004 Shannon Wilson PACCAR Rem tukwila
 LOCATION: 8801 E. Marginal Way S
 KA P.M.: Bill Throne

CONTRACTOR: AEC
 PERMIT #: D20-0241
 INSPECTOR: Paulo Salvan
 JURISDICTION: City of Tukwila
 WEATHER: cloudy TEMP: 55

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

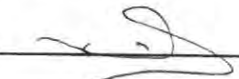
LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #5

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Gravel Barrow	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	Lift #3	Pit #5	1	PR&10	136.1	5.3%	99%	95%
2	Lift #3	Pit #5	1	PR&11	135.3	5.6%	99%	95%
3	Lift #4	Pit #5	1	PR&11	136.0	5.4%	99%	95%
4	Lift #4	Pit #5	1	PR&10	135.8	6.2%	99%	95%

EQUIPMENT NO.: 14617
 DAILY AVERAGE STANDARD DENSITY COUNT: 1494
 DAILY AVERAGE STANDARD MOISTURE COUNT: 605

Reviewed By: 

This testing does not preclude the possibility that the soil or hot mix aspha may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS :
 Superintendent/Representative: _____ Technician: _____

Paulo S

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DATE: 10/20/2021	Set Count:	CONTRACTOR: AEC
PROJECT #: 06621314		PERMIT #: D20-0241
PROJECT: 21-0045 Shannon Wilson PACCAR Rem		INSPECTOR: Paulo Salvan
LOCATION: 8801 E. Marginal Way S		JURISDICTION: City of Tukwila
KA P.M.: Bill Throne	WEATHER: cloudy	TEMP: 55° F

A representative of Krazan and Associates, Inc. arrived onsite to perform soil compaction tests.

On arrival, I spoke with the foreman onsite and we discussed the scope of work for the soil compaction tests. The soil compaction tests took place on Pit #5 for lifts 5 and on Pit #6 for lifts 1-5. The material used for backfill and testing was Gravel Barrow @ 8" lifts. I performed (2) soil compaction tests on Pit #5 and (5) soil compaction tests on Pit #6 with a Troxler Density Gauge. All 7 tests met and exceeded the minimum requirement of 95% soil compaction. Please refer to report 06621314SCR10202021PS for test results.

Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		
					

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DATE: 10/20/2021
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR Rem Tukwila
 LOCATION: 8801 E Marginal Way S
 KA P.M.: Bill Throne

CONTRACTOR: AEC
 PERMIT #: D20-0241
 INSPECTOR: Paulo Salvani
 JURISDICTION: City of Tukwila
 WEATHER: cloudy TEMP: 55

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #5 and Pit #6

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Gravel Barrow	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	lift #5	Pit #5	1	PR&10	135.5	6.7%	99%	95%
2	lift #5	Pit #5	1	PR&11	136.1	7.6%	99%	95%
3	lift #1	Pit #6	1	PR&6	135.1	5.8%	99%	95%
4	lift #2	Pit #6	1	PR&8	135.5	5.5%	99%	95%
5	lift #3	Pit #6	1	PR&10	135.9	5.7%	99%	95%
6	lift #4	Pit #6	1	PR&11	135.0	5.8%	98%	95%
7	lift #5	Pit #6	1	PR&11	134.0	5.4%	98%	95%

EQUIPMENT NO.: 14617 DAILY AVERAGE STANDARD DENSITY COUNT: 1493 DAILY AVERAGE STANDARD MOISTURE COUNT: 612 Reviewed By:	This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.
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To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS :

Superintendent/Representative: _____ Technician:

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Field
Report NO.: 06621314DFR10212021PS

DATE: 10/21/2021	Set Count:	CONTRACTOR: AEC
PROJECT #: 06621314		PERMIT #: D20-0241
PROJECT: 21-0045 Shannon Wilson PACCAR Rem		INSPECTOR: Paulo Salvan
LOCATION: 8801 E. Marginal Way S		JURISDICTION: City of Tukwila
KA P.M.: Bill Throne	WEATHER: cloudy	TEMP: 55° F

A representative of Krazan and Associates, Inc. arrived onsite to perform soil compaction tests.

On arrival, I spoke with the foreman onsite and we discussed the scope of work for the soil compaction tests. The soil compaction tests took place on the pits #5 and #6. I performed (2) soil compaction tests on Pit #5 for lift #6 and (3) soil compaction tests on Pit #6 for lifts #6, #7, and #8 with a Troxler Density Gauge. The material used for Gravel for backfill, the contractor placed approximately 8" of the Gravel Barrow. Please refer to report 06621314SCR10212021PS for test results.

Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		
					

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DATE: 10/21/2021
PROJECT #: 06621314
PROJECT: 21-0045 Shannon Wilson PACCAR Rem Tukwila
LOCATION: 8801 E. Marginal Way S
KA P.M.: Bill Throne

CONTRACTOR: AEC
PERMIT #: D20-0241
INSPECTOR: Paulo Salvan
JURISDICTION: City of Tukwila
WEATHER: cloudy TEMP: 55

NUCLEAR DENSOMETER
ASTM D6938

SANDCONE
ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : pit #5 and #6

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Gravel Barrow	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	Lift #6	Pit #5	1	PR&10	135.9	5.4%	99%	95%
2	Lift #6	Pit #5	1	PR&10	136.0	5.6%	99%	95%
3	Lift #6	Pit #6	1	PR&8	133.8	6.5%	98%	95%
4	Lift #7	Pit #6	1	PR&10	134.1	5.4%	98%	95%
5	Lift #8	Pit #6	1	PR&12	135.1	5.1%	99%	95%

EQUIPMENT NO.: 14617
DAILY AVERAGE STANDARD DENSITY COUNT: 1492
DAILY AVERAGE STANDARD MOISTURE COUNT: 608

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

Reviewed By: 

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS :

Superintendent/Representative:

Technician:





Offices Serving the Western United States

DATE: 10/29/2021	Set Count:	CONTRACTOR: Anderson Environmental
PROJECT #: 06621314		PERMIT #: N/A
PROJECT: Shannon Wilson		INSPECTOR: Marty Mundy
LOCATION: 8801 East Marginal Way South		JURISDICTION: Tukwila
KA P.M.: Bill Throne	WEATHER: Cloudy	TEMP: 45° F

On site for soil compaction testing.

On site as scheduled. Was notified, upon arrival, that no work was being performed today.

Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed for information purposes only.					
Superintendent/Representative:			Technician:		
					

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Field

Report NO.: 06621314DFR1132021MM

DATE: 11/3/2021	Set Count:	CONTRACTOR: Anderson Environmental
PROJECT #: 06621314		PERMIT #: N/A
PROJECT: Shannon and Wilson PACCAR		INSPECTOR: Marty Mundy
LOCATION: 8801 East Marginal Way South		JURISDICTION: Tukwila
KA P.M.: Bill Throne	WEATHER: Cloudy	TEMP: 45

On site for soil compaction testing.

Arrived on site as scheduled. After being on stand-by for two hours, was notified that no work would be performed today due to water issues.

Reviewed By:	<i>vc</i>	ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed for information purposes only.					
Superintendent/Representative:			Technician:		
					

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Construction Testing and Inspection

Field

Report NO.: 066213141142021JK

DATE: 11/4/2021	Set Count:	CONTRACTOR: Shannon and Wilson
PROJECT #: 06621314		PERMIT #: <i>D20-0241</i>
PROJECT: Shannon & Wilson PACCAR REM TUK		INSPECTOR: Joe Karahuta
LOCATION: 8801 E Marginal Way		JURISDICTION: Tukwila
KA P.M.: Bill Throne	WEATHER: Rain	TEMP: 54

Krazan and Associates, Inc. Representative Joe Karahuta arrived onsite per the request of Craig with AEC to perform soils compaction tests. Inspector noticed some standing water in 20'x14' area to be tested. The contractor could not use any compaction efforts due to the amount of rain in the last few days.



The first test taken was at 8" with Proctor #21L779 137.1 pcf at 6.4% moisture. The average of the two tests was 90.2% with an average of 11.2% Moisture. The moisture falls outside the 3% which makes the tests invalid. The contractor will use it as a informational baseline.

Craig with AEC had me take a few more tests with no improvement.

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Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above <u>WAS NOT</u> performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		
					

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Geotechnical Engineering • Environmental Engineering
Construction Testing and Inspection

Field

Report NO.: 066213141152021JK

DATE: 11/5/2021	Set Count:	CONTRACTOR: Shannon and Wilson
PROJECT #: 06621314		PERMIT #:
PROJECT: Shannon & Wilson PACCAR REM TUK		INSPECTOR: Joe Karahuta
LOCATION: 8801 E Marginal Way		JURISDICTION: Tukwila
KA P.M.: Bill Throne	WEATHER: Partly Cloudy	TEMP: 48° F


Krazan and Associates, Inc. Representative Joe Karahuta arrived onsite per the request of Craig with AEC to perform soils compaction tests in 20'x14' area the Inspector tested the area with no improvement from yesterday which averaged 90% where 95% is required. The contractor has opted to remove the 8" of Pit Run from Washington Rock and replace it with dryer material in lifts to achieve the required compaction.

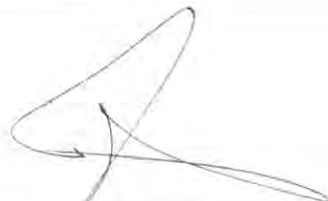
In Pit #2 1 Passing Compaction Test was Achieved on the 3rd Lift. The crew moved to Pit #3 where the 1st Lift passed compaction. Before butting the job up for the day Anderson Environmental opted to fill Pit #2 to the top while using an excavator to track in the material to let it sit over the weekend.

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Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		


--

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DATE: 11/5/2021
 PROJECT #: 06621314
 PROJECT: Shannon Wilson PACCAR Rem Tuk
 LOCATION: 8801 E Marginal Way S
 KA P.M.: Bill Throne

CONTRACTOR: Shannon & Wilson / Anderson Environment
 PERMIT #: N/A
 INSPECTOR: Joe Karahuta
 JURISDICTION: City of Tukwila
 WEATHER: Partly Sunny TEMP: 56

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

MAP LOCATION ATTACHED SEPARATELY

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #2 and Pit #3

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Pit Run 21L779	137.1	6.6%
All testing done using WSDOT FOP for AASHTO T-355 Method "A" At Client's Direction			
Results reported are the average of 2 1-min tests			

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	3rd Lift	Pit #2	1	8"	128.9	7.8%	94.0%	95%
2	1st Lift	Pit #3	1	8"	130.6	7.7%	95.3%	95%
3								
4								
5								
6								
7								
8								
9								

EQUIPMENT NO.: 20983
 DAILY AVERAGE STANDARD DENSITY COUNT: 615
 DAILY AVERAGE STANDARD MOISTURE COUNT: 1759

Reviewed By: *[Signature]*

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS : All asphalt placed on southbound (inbound) side of Stadium Way. All locations based off outbound station markings on Overhead Contact System Poles

Superintendent/Representative:

Technician:

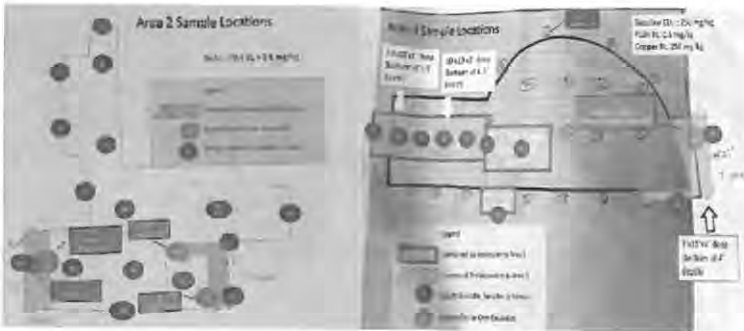
[Signature: J. Karahuta]

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DATE: 11/8/2021	Set Count:	CONTRACTOR: AEC
PROJECT #: 06621314		PERMIT #: D20-0241
PROJECT: 21-0045 Shannon Wilson PACCAR Rem		INSPECTOR: Faizan Muhammad
LOCATION: 8801 E Marginal Way S		JURISDICTION: City Of Tukwila
KA P.M.: WBT	WEATHER: Cloudy	TEMP: 56° F

Krazan field representative was onsite as requested by the contractor for earthwork observation and to perform required compaction testing. Upon arrival, the representative met Craig with AEC and reviewed the details, approved plans, and specifications.

Soil compaction tests took place on Area numbers 2 and 3 (also referenced as Pits 2 and 3) as marked in the diagram below. Contractor started with Area# 2. The material in this area was wet due to the amount of rain over the last few days. The pit had been backfilled loosely on Friday (11.5.21) with approximately 8 feet of import Gravel Borrow and lightly tracked in to fill the hole over the weekend in preparation for the anticipated rains. At request of contractor, KA inspector performed 3 density tests starting from the top lift, and then excavating down to the next test elevation, and finally to approximately 7 feet below the ground surface. **All 3 density tests conducted on fill in Area 2 did not meet the minimum compaction requirement of 95%** and the percentage moisture was around 10%. This was expected since the pit was basically just filled in quickly at the end of the day to prevent the hole from becoming filled with water over the weekend, and lifts were not placed in accordance with the thickness or compaction requirements. Since the previously placed loose backfill was removed, this does not result in a non-conformance.



In Area 3, AEC placed approximately 7 lifts of Gravel Borrow over about half of this area using a Kobelco-360 excavator and compacted the material using a BOMAG-BW-211-D single drum roller. Six (6) density tests were conducted by using a Troxler 3440 nuke gauge. The fill material in the portion of Area 3 that was placed and compacted exceeded the compaction requirement of 90%. Please refer to report# 06621314SCR1182021FM-1 for density test information and results.

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Handwritten signature/initials



A representative sample of 2 1/2" (Minus) crushed rock was obtained from the stock pile in accordance with ASTM D75 for and brought to our laboratory to conduct a proctor test. The contractor plans to use the 2 1/2" minus material as backfill in Area 2.

Reviewed By:	<i>JRW</i>	ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:			Technician:		

Faizan Muhammad

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DATE: 11/8/2021
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR Rem
 LOCATION: 8801 E Marginal Way S
 KA P.M.: WBT

CONTRACTOR: AEC
 PERMIT #: D20-0241
 INSPECTOR: Faizan Muhammad
 JURISDICTION: City Of Tukwila
 WEATHER: Cloudy TEMP: 56

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : _____

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Gravel Borrow (21L779)	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	FSG-2'	Area 2 (failed - then soil removed)	1	6	124.1	8.3%	91%	95%
2	FSG-4'	Area 2 (failed - then soil removed)	1	8	125.8	9.5%	92%	95%
3	FSG-6'	Area 2 (failed - then soil removed)	1	10	122.1	8.5%	89%	95%
4	Lift 1	Area 3	1	8	125.7	8.2%	92%	90%
5	Lift 2	Area 3	1	8	126.2	8.3%	92%	90%
6	Lift 3	Area 3	1	12	126.2	8.3%	92%	90%
7	Lift 4	Area 3	1	12	124.1	6.7%	91%	90%
8	Lift 5	Area 3	1	12	126.3	8.6%	92%	90%
9	Lift 6	Area 3	1	12	129.0	7.1%	94%	90%

EQUIPMENT NO.: 3440
 DAILY AVERAGE STANDARD DENSITY COUNT: 1470
 DAILY AVERAGE STANDARD MOISTURE COUNT: 669
 Reviewed By: JEN

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.
 REMARKS :

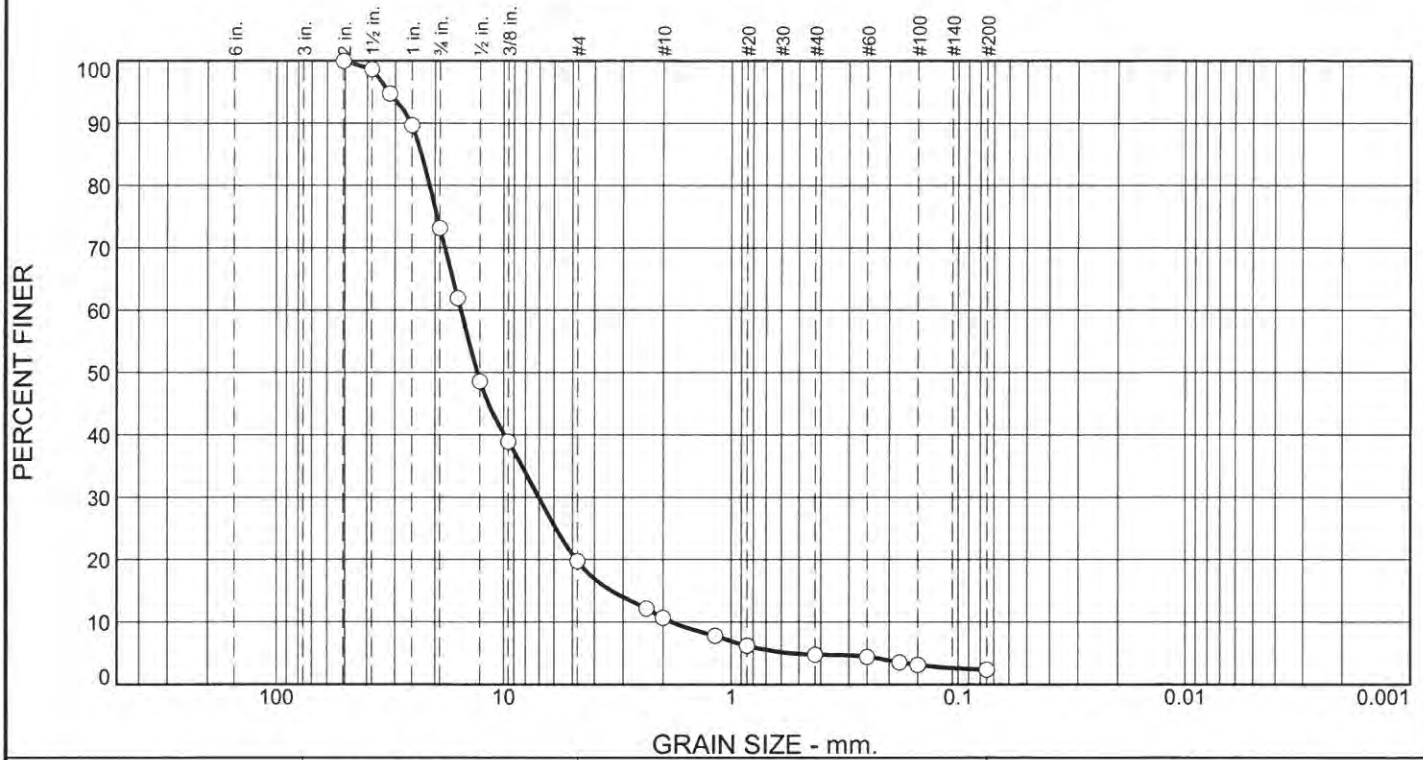
Superintendent/Representative:

Technician:

JEN ROY
Faizan Muhammad

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	27	53	9	6	3	2	

Test Results (C-136 & C-117)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
2	100		
1.5	99		
1.25	95		
1	90		
.75	73		
.625	62		
.5	49		
.375	39		
#4	20		
#8	12		
#10	11		
#16	8		
#20	6		
#40	5		
#60	4		
#80	4		
#100	3		
#200	2.3		

* (no specification provided)

Material Description

2 1/2" Minus Crushed.
 Sampled from onsite stockpile.
 Sampled by F.Muhammad.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= GW AASHTO (M 145)= A-1-a

Coefficients

D₉₀= 25.6378 D₈₅= 23.0093 D₆₀= 15.3930
 D₅₀= 13.0585 D₃₀= 7.0263 D₁₅= 3.3563
 D₁₀= 1.8277 C_u= 8.42 C_c= 1.75

Remarks

Sample ID: 21L827
 Sample Date: 11-8-21

Date Received: 11-8-21 Date Tested: 11-8-21
 Tested By: I.Teriong
 Checked By: M.Thomas *[Signature]*
 Title: Material Laboratory Manager

Sample Number: 21L827

Date Sampled: 11-8-21

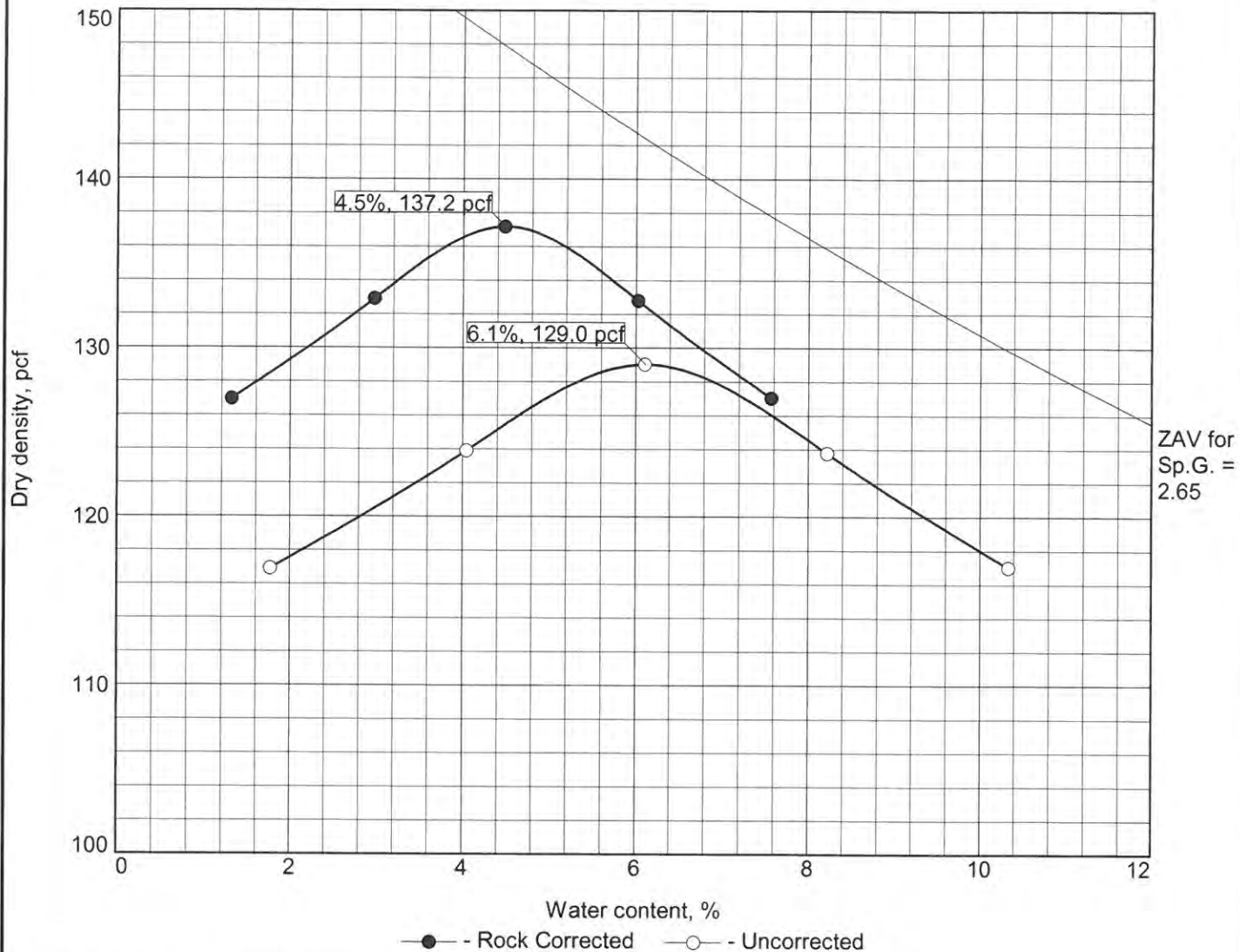


Client: Anderson Environmental Contracting, LLC
 Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila

Project No: 066-21314

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 1557 Method C Modified
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	GW	A-1-a	-	2.65	NV	NP	27	2.3

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 137.2 pcf	129.0 pcf	2 1/2" Minus Crushed. Sampled from onsite stockpile. Sampled by F.Muhammad.
Optimum moisture = 4.5 %	6.1 %	

Project No. 066-21314 Client: Anderson Environmental Contracting, LLC Project: 21-0045 Shannon Wilson PACCAR Rem Tukwila ○ Sample Number: 21L827	Remarks: Sample ID: 21L827 Sample Date: 11-8-21
--	--



Figure

Tested By: I.teriong _____ Checked By: M.Thomas *[Signature]*

DATE: 11/9/2021	Set Count:	CONTRACTOR: S & W / AEC Environmental
PROJECT #: 06621314		PERMIT #: Not Available
PROJECT: Shannon & Wilson PACCAR REM TUK		INSPECTOR: Joe Karahuta
LOCATION: 8801 E Marginal Way		JURISDICTION: Tukwila
KA P.M.: Bill Throne	WEATHER: Cloudy	TEMP: 50° F

Krazan and Associates, Inc. Representative Joe Karahuta arrived onsite per the request of Craig with AEC to perform soils compaction testing.

AEC brought CSBC from Washington Rock Quarry to place as backfill in Pit #2. A compaction test was conducted on the first lift of backfill in Pit #2 using a Troxler nuclear density gauge. This lift met the minimum compaction requirement of 92 percent.

The KA representative then observed the placement of and conducted density tests on the 5 lifts of backfill placed on half of Area 3, as well as the top lift of the backfill placed over the other half of area 3 on 11.8.2021. the backfill material was the pit run material. All of the backfill placed in Area 3 on this date met the minimum compaction requirement of 90 percent. Please see Compaction Report #06621314SCR1192021JK for results.

Reviewed By: <i>JRW</i>	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.		
Superintendent/Representative:	Technician:	
	<i>JRW PDR / Joe Karahuta</i>	

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DATE: 11/9/2021
 PROJECT #: 06621314
 PROJECT: Shannon Wilson PACCAR Rem Tuk
 LOCATION: 8801 E Marginal Way S
 KA P.M.: Bill Throne

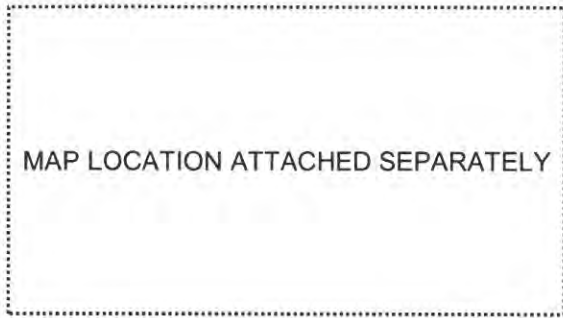
CONTRACTOR: Shannon & Wilson / Anderson Environment
 PERMIT #: N/A
 INSPECTOR: Joe Karahuta
 JURISDICTION: City of Tukwila
 WEATHER: Partly Sunny TEMP: 56

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP



- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #2 and Pit #3

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Pit Run 21L779	137.1	6.6%
2	2-1/2" Minus Crushed Rock	137.2	3.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	1st Lift	Pit #2	2	8"	127.6	10.3%	93.0%	92%
2	1st Lift	Pit #3	1	8"	127.2	9.4%	92.8%	90%
3	2nd Lift	Pit #3	1	8"	124.0	10.0%	90.4%	90%
4	3rd Lift	Pit #3	1	8"	125.9	10.2%	91.8%	90%
5	4th Lift	Pit #3	1	8"	124.1	9.7%	90.5%	90%
6	5th Lift	Pit #3	1	8"	124.3	10.5%	90.7%	90%
7	5th Lift	Pit #3 (placed 11-8-2021 other half)	1	8"	130.0	9.3%	94.8%	90%
8								
9								

EQUIPMENT NO.: 19386
 DAILY AVERAGE STANDARD DENSITY COUNT: 537
 DAILY AVERAGE STANDARD MOISTURE COUNT: 1618

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

Reviewed By: *JRN*

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS :

Superintendent/Representative:

Technician:

JRN
Joe Karahuta

Offices Serving the Western United States

Field

Report NO.: 066213141102021JK

DATE: 11/10/2021	Set Count:	CONTRACTOR: Shannon and Wilson
PROJECT #: 06621314		PERMIT #:
PROJECT: Shannon & Wilson PACCAR REM TUK		INSPECTOR: Joe Karahuta
LOCATION: 8801 E Marginal Way		JURISDICTION: Tukwila
KA P.M.: Bill Throne	WEATHER: Sunny	TEMP: 49

Krazan and Associates, Inc. Representative Joe Karahuta arrived onsite per the request of Craig with AEC to perform Soils Compaction Tests.

AEC placed backfill consisting of 2½-inch minus crushed rock in Pit #2. At the time of this testing, a proctor test was being conducted. Therefore, a maximum dry density of 139.1 pcf was used for this material for informational purposes only. The contractor was aware that whether a lift passed or failed compaction would be based on the final proctor values once the laboratory test was complete. Despite this, the contractor continued placement of additional lifts. The laboratory proctor curve was completed, and this report has been updated to reflect the maximum dry density of the material as 137.2 pcf at an optimum moisture content of 4.5 percent. Please see Compaction Report #06621314SCR1102021JK for the density test results. None of the backfill lifts placed today in Area 2 met the minimum required compaction of 95 percent.

Reviewed By: <i>JRN</i>	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS NOT performed in accordance with the approved plans, specifications and regulatory requirements.		
Superintendent/Representative:	Technician:	
	<i>JRN FOR/</i> <i>Joe Karahuta</i>	

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DATE: 11/10/2021
PROJECT #: 06621314
PROJECT: Shannon Wilson PACCAR Rem Tuk
LOCATION: 8801 E Marginal Way S
KA P.M.: Bill Throne

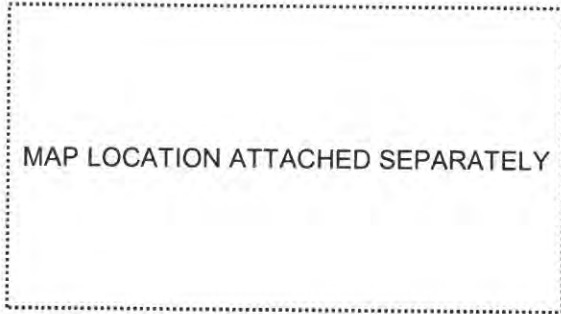
CONTRACTOR: S & W / Anderson Environmental
PERMIT #: Not Available
INSPECTOR: Joe Karahuta
JURISDICTION: City of Tukwila
WEATHER: Partly Sunny TEMP: 56

NUCLEAR DENSOMETER
ASTM D6938

SANDCONE
ASTM D1556

OTHER

LOCATION MAP



- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Pit #2 and Pit #3

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCE)	Optimum Moisture
1	Pit Run 21L779	137.1	6.6%
2	2-1/2 inch Minus crushed rock	137.2	4.5%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	1st Lift	Pit #2	2	8"	127.6	10.3%	93.0%	95%
2	2nd Lift	Pit #2	2	8"	114.4	3.0%	83.4%	95%
3	3rd Lift	Pit #2	2	8"	119.0	3.1%	86.7%	95%
4	4th Lift	Pit #2	2	8"	124.9	3.4%	91.0%	95%
5	5th Lift	Pit #2	2	8"	124.5	3.2%	90.7%	95%
6								
7								
8								
9								

EQUIPMENT NO.: 19386
DAILY AVERAGE STANDARD DENSITY COUNT: 537
DAILY AVERAGE STANDARD MOISTURE COUNT: 1618
Reviewed By: *JRN*

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

REMARKS: To the best of my knowledge, the above WAS NOT performed in accordance with the approved plans, specifications and regulatory requirements.

Superintendent/Representative:

Technician:

JRN FOR / Joe Karahuta

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Field
Report NO.: 06621314DFR11232021AT

DATE: 11/23/2021	Set Count:	CONTRACTOR: Sierra
PROJECT #: 06621314		PERMIT #: D20-0241
PROJECT: Shannon Willson PACCAR REM Tukw		INSPECTOR: Anders Tvedt
LOCATION: 8801 E Marginal Way		JURISDICTION: Tukwila
KA P.M.: WBT	WEATHER: Overcast	TEMP: 45° F

The Krazan representative arrived onsite to perform soil compaction on Pit #4 backfill material. The representative met with the contractor to discuss the scope of the work. The special inspection is as followed:

Soil Compaction: Pit Run Backfill

The Native material was excavated 5-feet below grade prior to the arrival of the representative. The Pit #4 backfill material used is Pit Run from Washington Rock Quarries. The pit run was placed in lifts of 8-inches with an excavator and then compacted with a large single vibrating drum roller. A nuclear moisture-density gauge was used to perform the soil compaction testing. Compaction testing was performed on each lift placed. The Pit Run Backfill material passed the 90% relative compaction per onsite specifications. See soil compaction report 06621314SCR112321AT-1 for compaction results.

Reviewed By: 	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.		
Superintendent/Representative:	Technician:	
		

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DATE: 11/23/2021
 PROJECT #: 06621314
 PROJECT: Shannon Wilson PACCAR REM Tukw
 LOCATION: 8801 E Marginal Way
 KA P.M.: WBT

CONTRACTOR: Sierra
 PERMIT #: D20-0241
 INSPECTOR: Anders Tvedt
 JURISDICTION: Tukwilla
 WEATHER: Overcast TEMP: 45

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556


OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Landscape backfill

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCE)	Optimum Moisture
1	Pit Run-21L799	137.1	6.6%


TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	~52" BG	Pit #4	1	PR 8	130.5	6.8%	95%	90%
2	~44"BG	Pit #4	1	PR 8	131.7	6.7%	96%	90%
3	~38"BG	Pit #4	1	PR 8	127.3	7.3%	93%	90%
4	~32"BG	Pit #4	1	PR 8	133.0	6.6%	97%	90%

EQUIPMENT NO.: 35734
 DAILY AVERAGE STANDARD DENSITY COUNT: 1819
 DAILY AVERAGE STANDARD MOISTURE COUNT: 687
 Reviewed By: 

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.
 REMARKS :

Superintendent/Representative:

Technician:




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DATE: 11/24/2021	Set Count:	CONTRACTOR: Sierra
PROJECT #: 06621314		PERMIT #: D20-0241
PROJECT: Shannon Willson PACCAR REM Tukw		INSPECTOR: Anders Tvedt
LOCATION: 8801 E Marginal Way		JURISDICTION: Tukwila
KA P.M.: WBT	WEATHER: Overcast	TEMP: 45° F

The Krazan representative arrived onsite to perform soil compaction on Pit #4 backfill material. The representative met with the contractor to discuss the scope of the work. The special inspection is as followed:

Soil Compaction: Pit Run Backfill

Approximately 16" of the pit run backfill was placed for Pit #4 berm on the west end of the site. Pit #4 backfill material used is Pit Run from Washington Rock Quarries. The pit run was placed in lifts of 8-inches with an excavator and then compacted with a large single vibrating drum roller. A nuclear moisture-density gauge was used to perform the soil compaction testing. Compaction testing was performed on each lift placed. The Pit Run Backfill material passed the 90% relative compaction per onsite specifications. See soil compaction report 06621314SCR112421AT-1 for compaction results.

Reviewed By: 	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.		
Superintendent/Representative:	Technician:	
		

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DATE: 11/24/2021
 PROJECT #: 06621314
 PROJECT: Shannon Wilson PACCAR REM Tukw
 LOCATION: 8801 E Marginal Way
 KA P.M.: WBT

CONTRACTOR: Sierra
 PERMIT #: D20-0241
 INSPECTOR: Anders Tvedt
 JURISDICTION: Tukwilla
 WEATHER: Overcast TEMP: 45

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556


OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : Landscape backfill

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
1	Pit Run-21L799	137.1	6.6%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	~16" BG	Pit #4	1	PR 8	126.8	8.0%	92%	90%
2	~8" BG	Pit #4	1	PR 8	124.8	7.7%	91%	90%
3	~grade	Pit #4	1	PR 8	125.4	7.4%	91%	90%

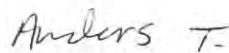
EQUIPMENT NO.: 35734
 DAILY AVERAGE STANDARD DENSITY COUNT: 1829
 DAILY AVERAGE STANDARD MOISTURE COUNT: 683
 Reviewed By: 

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.
 REMARKS :

Superintendent/Representative:

Technician:



Offices Serving the Western United States

DATE: 8/29/2022	Set Count:	CONTRACTOR: Anderson Environmental Contracting, LLC
PROJECT #: 06621314		PERMIT #:
PROJECT: 21-0045 Shannon Wilson PACCAR		INSPECTOR: Kelby Carambot
LOCATION: 8801 E Marginal Way S, Tukwila WA		JURISDICTION: City of Tukwila
KA P.M.: WBT	WEATHER: Sunny	TEMP: 75° F

Krazan & Associates, Inc. (KA) field representative arrived on site as requested for soil compaction testing. The project was the backfill of an excavated region in Area 4, at the SW corner of the site. Upon arrival onsite, the KA representative went over the approved project plans and specifications for the project with the contractor.

A nuclear moisture-density gauge was used to evaluate the compaction of an 8" loose lift of material visually classified as brown well-graded sand with silt and gravel imported from Washington Rock Quarries. Initially the material did not pass its minimum compaction requirements due to low moisture. The contractor obtained more water while the KA representative left the site for another inspection. Upon arrival back on site around 12:00 p.m., the contractor had added water to the initial lift of material, and after 5-6 down-and-back passes of the smooth drum vibratory roller, the material had been compacted into a tight, dense mass near optimum moisture. The material then passed its minimum compaction requirement of 95%.

Please see soil compaction report #06621314SCR8292022KC for additional details and soil compaction test results.

Reviewed By: <i>AT</i>	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.		
Superintendent/Representative:	Technician:	
	<i>Kelby Carambot</i>	

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DATE: 8/29/2022
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR
 LOCATION: 8801 E Marginal Way S, Tukwila WA
 KA P.M.: WBT

CONTRACTOR: Anderson Environmental Contracting, LLC
 PERMIT #: _____
 INSPECTOR: Kelby Carambot
 JURISDICTION: City of Tukwila
 WEATHER: Sunny TEMP: 75

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : _____

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
22L573	SW-SM	133.1	8.8%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	Lift 1	Area 4 - E portion of Site	22L573	PR & 4"	127.1	8.0%	95%	95%

EQUIPMENT NO.: 21386
 DAILY AVERAGE STANDARD DENSITY COUNT: 1531
 DAILY AVERAGE STANDARD MOISTURE COUNT: 622
 Reviewed By: AT

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.
 REMARKS :

Superintendent/Representative: _____ Technician: _____

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Field
Report NO.: 06621314DFR8302022KC

DATE: 8/30/2022	Set Count:	CONTRACTOR: Anderson Environmental Contracting, LLC
PROJECT #: 06621314		PERMIT #: Not On Site
PROJECT: 21-0045 Shannon Wilson PACCAR		INSPECTOR: Kelby Carambot
LOCATION: 8801 E Marginal Way S, Tukwila WA		JURISDICTION: City of Tukwila
KA P.M.: WBT	WEATHER: Sunny	TEMP: 81° F

Krazan & Associates, Inc. (KA) field representative arrived on site as requested for soil compaction testing. The project was the backfill of an excavated region in Area 4, at the SW corner of the site. Upon arrival onsite, the KA representative went over the approved project plans and specifications for the project with the contractor and the Shannon & Wilson representative on site.

A nuclear moisture-density gauge was used to evaluate the compaction of an 8" loose lift of material visually classified as brown well-graded sand with silt and gravel imported from Washington Rock Quarries. This lift was placed on the lift placed and compacted yesterday, 8/29/2022.

Initially the material did not pass its minimum compaction requirements. The contractor added more water to the material, and re-rolled the area with a smooth drum vibratory roller. After the material approached a near-optimum moisture state, the KA representative used the nuclear moisture-density gauge to test the material after each successive down-and-back pass of the roller. After each pass with the roller, the material's compaction didn't change much, with the highest compaction percentage reached being 94% of the proctor for the sample. The lift of brown well-graded sand with silt and gravel appeared to be compacted in a tight, dense mass, based off its response to the vibratory roller, as well as the relatively unvarying compaction. The Shannon & Wilson representative on site discussed this result with his office.

The contractor placed a third lift of material on the lift placed earlier, over the eastern portion of the excavated region; on the SE part of the site a test passed its minimum compaction of 95%, while on the NE part of the site, the test failed its compaction potentially due to low moisture (5.2%). The contractor is aware of this test result, and indicated more water should be added to this material and re-compacted. The western portion of the second lift placed was exposed when the KA representative left the site.

Please see soil compaction report #06621314SCR8302022KC for additional details and soil compaction test results.

Reviewed By: <i>AA</i>	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS NOT performed in accordance with the approved plans, specifications and regulatory requirements.		
Superintendent/Representative:	Technician:	
	<i>Kelby Carambot</i>	

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DATE: 8/30/2022
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR
 LOCATION: 8801 E Marginal Way S, Tukwila WA
 KA P.M.: WBT

CONTRACTOR: Anderson Environmental Contracting, LLC
 PERMIT #: _____
 INSPECTOR: Kelby Carambot
 JURISDICTION: City of Tukwila
 WEATHER: Sunny TEMP: 81

NUCLEAR DENSOMETER
 ASTM D6938

SANDCONE
 ASTM D1556

OTHER

LOCATION MAP

- Paved Areas :
- Building Pad(s) :
- Utility :
- Other : _____

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
22L573	SW-SM	133.1	8.8%

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	Lift 2	Area 4 - E Side	22L573	PR & 4"	123.8	8.0%	93%	95%
2	Lift 2	Area 4 - E Side	22L573	PR & 4"	123.6	8.2%	93%	95%
3	Lift 2	Area 4 - SE Side	22L573	PR & 4"	124.9	7.8%	94%	95%
4	Lift 3	Area 4 - SE Side	22L573	PR & 6"	128.4	8.3%	96%	95%
5	Lift 3	Area 4 - NE Side	22L573	PR & 6"	124.4	5.2%	93%	95%

EQUIPMENT NO.: 21386
 DAILY AVERAGE STANDARD DENSITY COUNT: 1544
 DAILY AVERAGE STANDARD MOISTURE COUNT: 619
 Reviewed By: AT

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS NOT performed in accordance with the approved plans, specifications and regulatory requirements.
 REMARKS:

Superintendent/Representative: _____ Technician: _____

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Field
Report NO.: 06621314DFR912022KC

DATE: 9/1/2022	Set Count:	CONTRACTOR: Anderson Environmental Contracting, LLC
PROJECT #: 06621314		PERMIT #: Not On Site
PROJECT: 21-0045 Shannon Wilson PACCAR		INSPECTOR: Kelby Carambot
LOCATION: 8801 E Marginal Way S, Tukwila WA		JURISDICTION: City of Tukwila
KA P.M.: WBT	WEATHER: Sunny	TEMP: 65° F

Krazan & Associates, Inc. (KA) field representative arrived on site as requested for soil compaction testing. The project was the backfill of an excavated region in Area 4. Upon arrival on site, the KA representative went over the approved project plans and specifications for the project with the contractor and the Shannon & Wilson representative.

A nuclear moisture-density gauge was used to evaluate the compaction of multiple 8" loose lifts of material visually classified as brown well-graded sand with silt and gravel imported from Washington Rock Quarries. Tests 1 and 2 were on Lift 3 placed in the main region of Area 4, and passed their minimum compaction requirement of 95%. The remaining areas tested today were in a trench region on the NW side of Area 4. Initial tests on Lift 1 and Lift 2 placed in the trench area indicated a low compaction with near-optimum moisture (Tests 3 & 5). After these initial tests, the contractor rolled over the material with multiple down & back passes of a smooth drum vibratory roller. After this effort, the material was re-tested (Tests 4 & 6) and subsequent passes with the roller did not increase their compaction results. The material was visibly packed into a tight, dense state.

On Lift 3 of the Trench Area, the material did not pass its minimum compaction results immediately. After Test 7, the KA representative left the site and arrived again later at 12:00. The contractor had compacted the material into a tight, dense mass in a near-optimum moisture state, with a maximum compaction of 94%. Based off the response of the material to more compaction, the material's firm and unyielding state, and its near-optimum moisture state, the Shannon & Wilson representative on site accepted the results of soil compaction tests as being adequate for the site. *

Please see soil compaction report #06621314SCR912022KC- for additional details and soil compaction test results.

Reviewed By: <i>WJ</i>	ASTM Test #:	Asset Number(s):
To the best of my knowledge, the above WAS NOT performed in accordance with the approved plans, specifications and regulatory requirements. * See note above		
Superintendent/Representative:	Technician:	
	<i>Kelby Carambot</i>	

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DATE: 9/1/2022
 PROJECT #: 06621314
 PROJECT: 21-0045 Shannon Wilson PACCAR
 LOCATION: 8801 E Marginal Way S, Tukwila WA
 KA P.M.: WBT

CONTRACTOR: Anderson Environmental Contracting, LLC
 PERMIT #: Not On Site
 INSPECTOR: Kelby Carambot
 JURISDICTION: City of Tukwila
 WEATHER: Sunny TEMP: 65

EQUIPMENT NO.:	<u>21386</u>	This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.
DAILY AVERAGE STANDARD DENSITY COUNT:	<u>1534</u>	
DAILY AVERAGE STANDARD MOISTURE COUNT:	<u>619</u>	
Reviewed By: <u><i>ml</i></u>		

To the best of my knowledge, the above WAS NOT performed in accordance with the approved plans, specifications and regulatory requirements.
 REMARKS :

Superintendent/Representative:

Technician:

K. Carambot

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Compaction Report

Effective 12/15/2020

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